



Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण

GUIDELINES FOR THE OPERATION OF NIGHT SAFARI IN RECOGNIZED INDIAN ZOOS



2025



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These guidelines were drafted by a sub-committee constituted by the Central Zoo Authority for looking into matters pertaining to night safari in ex situ facilities vide letter bearing Computer No. 231953 dated 27/12/2024 with the following members:

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The sub-committee carried out its functions under the oversight of Dr. Sanjay Kumar Shukla, Member Secretary, CZA and Akanksha Mahajan, DIG (Hq.), CZA.

1 Introduction

Zoos have undergone a remarkable transformation over the past decades, evolving from traditional animal display facilities to modern conservation centers that prioritize animal welfare, education, and sustainability. This evolution has been driven by innovative design and immersive experiences that enhance visitor engagement and promote empathy and respect for wildlife.

One such innovation is the display of animals after sunset, offering zoo visitors a unique opportunity to observe cathemeral, nocturnal and crepuscular species (henceforth referred to as *non-diurnal species*) in specialized settings. These specialized experiences go beyond simple entertainment, contributing to conservation education, ecological awareness, and sustainable tourism by fostering a deeper understanding of the complexities of animal behaviors and their ecological roles.

Night safaris represent a highly specialized category of zoological operations, requiring meticulous planning and management to address the unique needs of non-diurnal species. These operations are inherently sensitive, demanding a deep understanding of species-specific behaviors, ecological rhythms, and welfare requirements. Therefore, introducing nighttime operations necessitates a heightened level of care, from designing enclosures and lighting systems to managing staff shifts and visitor interactions. Every aspect must be thoughtfully considered ensuring minimal disruption to the animals' natural behaviors and to create an enriching, ethical experience for visitors. Visitor circulation plays a crucial role in the success of nighttime zoo operations. Thoughtfully designed pathways, guided tours, and immersive storytelling can create meaningful and educational experiences for visitors while ensuring minimal disturbance to animals. At the same time, these facilities must prioritize animal welfare, avoiding practices that coerce or manipulate natural behaviors, such as using food to enforce activity or concealing natural life stages.

India's rich biodiversity, encompassing diverse terrestrial and island ecosystems, provides a compelling backdrop for such initiatives. Nighttime operations in zoos also present an opportunity to align with green zoo concepts by adopting sustainable practices in design, resource management, and economic planning. Further, such facilities should emphasize energy efficiency, water conservation, waste reduction, and integrate renewable energy sources to minimize environmental footprints.

Given the complexity required, night safaris are not simply an extension of day-time zoo operations but a distinct endeavor that underscores the responsibility to balance animal welfare, conservation goals, and public engagement. When executed with care and sensitivity, night safaris have the potential to foster deeper connections between visitors and wildlife while highlighting the ecological importance of non-diurnal species. Further, by adopting sustainable principles and innovative approaches, zoos can redefine visitor engagement and meaningfully and ethically to conservation efforts.

These guidelines provide a comprehensive framework for the design, operation, and management of zoos that display animals after sunset. They address the ecological, legal, and operational challenges unique to such initiatives while balancing the needs of animals, visitors, and staff.

These guidelines are informed by globally recognized animal welfare frameworks, such as the *Five Domains Model*. This model emphasizes key aspects of animal care, including nutrition, environment, health, behavior, and mental state, which collectively contribute to the overall well-being of animals. Nighttime zoo operations should be managed to provide optimal conditions across these domains, with particular attention to environmental factors such as lighting, noise, and visitor interactions. Key considerations, including the use of minimally disruptive lighting, species-specific enrichment programs, quiet zones, and thoughtful enclosure design, have been integrated into these guidelines to align with the principles of the *Five Domains Model*. By implementing these practices, zoos can create environments that promote natural behaviors, minimize stress, effectively mitigate potential stressors, and maintain positive welfare outcomes associated with the display of animals after sunset, while fostering the physical and mental well-being of animals and providing an ethical and engaging experience for visitors.

2 Purpose

The current statutory provisions, which refer to the establishment and operation of zoos that allow for the display of animals after sunset include the following:

The **Guidelines for Establishment & Scientific Management of Zoos in India** (CZA, 2008) include provisions for specialized zoos that focus on specific groups of

species, such as nocturnal animals, reptiles, or birds. However, it does not specifically address establishment or operation of night safari.

The **Additional guidelines incorporating prohibitory provisions for the preparation of Master Plan for long-term development of the zoos** (CZA, 2011) includes the following provisions specifically addressing night safari and operational hours:

1c. Creation of night safari/safari: The CZA will not accord approval for creation of night safaris and safaris diverting the forest land. The existing zoos may establish night safaris/safaris without causing any adverse impact on the animal facilities in the zoo. The CZA should not provide any financial assistance for establishing of night safaris/safari in any zoo.

2l. Opening and closing time of the zoo/shifts: The zoos should be kept open to visitors for a period as decided by in management of the zoo between the sun rise and sun set. No visitor should be allowed in the zoo after sun set except in the night safaris. No same animal should be displayed for day viewing and in night safari.

Although there is precedence – evident in the aforementioned provisions – for the establishment and operation of night safari in recognized zoos, current regulations do not comprehensively address the specific requirements of nighttime operations. To bridge this gap, these guidelines offer detailed recommendations tailored to establish and manage night safari in recognized Indian zoos, while maintaining full compliance with statutory provisions.

The operation of zoos during nighttime hours largely resembles daytime operations, but certain practicalities necessitate additional considerations. These may include aspects such as animal collection, lighting design, management of staff shifts, and strategies for visitor management. These guidelines address these aspects, thereby, ensuring seamless integration with existing practices while meeting the distinct needs of nighttime operations. By addressing gaps unique to nighttime operations, these guidelines complement existing regulations to ensure high standards of animal welfare, provide meaningful visitor engagement, advance conservation objectives, and promote sustainable practices. Ultimately, it provides a consistent approach to implementing night safari initiatives across diverse zoological settings.

3 Scope and Applicability

These guidelines are applicable to the whole of India and are intended for recognized zoos, as well as any proposed establishments to be operated as zoos under the Wild Life (Protection) Act, 1972.

In the context of these guidelines, the term **night safari** refers to *a guided visit conducted within recognized zoos after sunset, where non-diurnal animals are displayed in naturalistic enclosures under artificial illumination, prioritizing their welfare and showcasing their natural activity patterns to promote conservation awareness.*

The existing statutory provisions of the Central Zoo Authority (CZA) that govern zoo management – encompassing animal welfare, visitor engagement, and facility design in recognized zoos – shall *ipso facto* apply to all recognized zoos operating night safaris unless explicitly amended. All such operations, including those involving night safaris, must comply with the Wild Life (Protection) Act, 1972, and align with India's broader legal framework for zoos, including the National Zoo Policy, 1998; the Recognition of Zoo Rules, 2009; the Guidelines for the Establishment and Scientific Management of Zoos in India, 2008; and any other extant or future guidelines or policies issued by the CZA.

The aspect of forest land diversion for the establishment of night safari must be carefully examined in light of the recent amendment to the Forest Conservation Act, 1980, now titled the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 2023, and related policies. Furthermore, detailed guidelines, including a comprehensive list of *Dos and Don'ts*, have been issued by the Ministry of Environment, Forest and Climate Change for the establishment of zoos on forest land by the Forest Department or State Zoo Authority, as per File No. 27-7/2020-CZA, dated 8th June 2022. All proposals related to the establishment of night safari must ensure compliance to these provisions to ensure alignment with the overarching legal and regulatory frameworks.

These guidelines do not apply to specialized animal displays (walk through animal enclosures, drive through enclosures and composite animal enclosures), as outlined in the **Guidelines for the Establishment and Scientific Management of Zoos in India** (CZA, 2008).

Furthermore, these guidelines should inform the design and operation of facilities, such as nocturnal houses or other analogous setups, for housing non-diurnal species

in daytime zoos.

4 Objectives

The primary objective of these guidelines is to ensure that the operation of night safaris in recognized Indian zoos aligns with national legislation, conservation priorities, and globally accepted best practices in zoo management. Specifically, these guidelines aim:

- i) To promote the conservation of non-diurnal species by providing environments that replicate their natural habitats, thereby enhancing public understanding of their ecological importance.
- ii) To ensure that the display of animals in night safari upholds the highest standards of animal welfare, including the preservation of natural circadian rhythms and the provision of undisturbed & stress-free housing for animals.
- iii) To create an immersive and meaningful visitor experience while ensuring accessibility and inclusiveness, which fosters awareness, empathy, and conservation-minded attitudes.
- iv) To incorporate efficient and sustainable practices in the establishment, resource management and operation of night safari.
- v) To align the establishment and operation of night safari with the legal provisions of the Wild Life (Protection) Act, 1972, and other relevant statutory provisions.

5 Planning & Implementation

- 1) In the context of these guidelines, four possible scenarios are envisaged pertaining to the establishment of night safari:
 - i) A proposed zoo that incorporates both daytime zoo and night safari operations from the outset.
 - ii) An operational recognized zoo that plans to integrate a night safari alongside its daytime zoo.

- iii) A proposed, standalone night safari.
 - iv) An operational recognized daytime zoo that is proposed to transition into a night safari.
- 2) In all the aforementioned scenarios, upon receipt of the proposal, the Central Zoo Authority (CZA) shall appoint a team of experts with considerable experience in zoo management to conduct a site inspection. Following the commissioning of the night safari, expert team shall conduct a comprehensive audit or evaluation to ensure that all aspects of the facility, including enclosures, lighting, visitor management, and animal welfare measures, meet the prescribed standards. Only upon satisfactory compliance with these requirements shall the night safari be permitted to commence operations.
 - 3) All proposals for such establishments must include a Detailed Project Report (DPR) (in case of point (a) or (c) listed under (1)) or Master Plan (in case of point (b) listed under (1)), as applicable, detailing the establishment, scientific management of animals, and visitor management in the night safari, in accordance with extant provisions.
 - 4) If an existing daytime zoo is to be transitioned into a night safari (point (d) listed under (1)), the process shall require extensive modifications to meet the specific requirements of nighttime operations. This encompasses redesigning enclosures, implementing suitable lighting systems, establishing dedicated visitor management protocols, and addressing animal welfare adaptations, among other critical aspects. The proposal for such a conversion must be initiated with the preparation of a Detailed Project Report (DPR) that comprehensively outlines the scope, objectives, and necessary modifications. Upon finalization, all proposed changes must be incorporated into the zoos' Master Plan to ensure compliance with statutory guidelines and the sustainability of operations.
 - 5) When a night safari is operated in conjunction with a daytime zoo (point (a) or (b) listed under (1)), a well-planted buffer of at least 50 meters must separate the day and night operations. This buffer should provide complete isolation to minimize disturbance to animals and visitors in each setting.

- 6) Enclosure drawings submitted for the night safari must be accompanied by a comprehensive concept note. This must include technical drawings and detailed explanations of how the animals will be managed within the enclosures, ensuring welfare, safety, and natural behavior.
- 7) The establishment and operation of night safari, whether in existing zoos or new facilities, must specifically adhere to the Schedule to Rule 10 (3.4) of the Recognition of Zoo Rules, 2009, *i.e.* the area allocated for animal housing shall not exceed 30% of the total land area, while a minimum of 30% of the land must be maintained under natural vegetation.

In cases where a night safari is proposed alongside an operational daytime zoo, the zoo must first delineate a separate area exclusively for the night safari. For both the daytime zoo and the night safari, the 30:30 ratio as specified above must be calculated independently within their respective delineated areas. This ensures that both operations comply with the prescribed land-use requirements, maintaining appropriate space for animal housing and natural vegetation in each facility.

While 30% of the land is permitted for animal housing, the remaining area within the zoo, which may include other built-up structures, visitor amenities, and operational facilities, must be designed and managed in a manner that minimizes disturbance to the natural vegetation. Priority should be given to preserving the natural habitat, ensuring that the ecological integrity of the area is maintained and the overall impact on the environment is kept to a minimum.

- 8) Night safaris shall not be proposed or operated as satellite facilities either in the case of existing recognized zoos or new establishments that plan to operate both daytime zoos and night safari.
- 9) In cases where night safaris are proposed in existing zoos with large vacant lands, the proximity of the entrance plaza to diurnal animal exhibits may cause disturbances. To mitigate this, it is recommended to establish a separate entrance plaza exclusively for the night safari, located at a sufficient distance from the daytime animal enclosures.

- 10) All collection plans must align with the Central Zoo Authority (CZA) guidelines to ensure proper species management, with corresponding provisions incorporated into the Master Plan. For establishments operating both daytime zoos and night safaris, a composite collection plan must be developed, adhering to the prescribed 75% native and 25% non-native species ratio.
- 11) Night safari operations must prioritize animal welfare and sustainability. Species selection shall be cautiously undertaken, avoiding those particularly vulnerable to the challenges of nighttime operations unless husbandry protocols tailored to their specific needs are firmly established. Adherence to best practices in animal care and management is mandatory to prevent undue stress and maintain the ethical standards of night safari initiatives.
- 12) The CZA shall establish a dedicated committee to oversee night safari operations. This committee will enforce core principles, evaluate proposals, and ensure compliance with guidelines. No night safari design shall be approved without a site inspection conducted by a committee comprising experts with substantial knowledge and experience in zoo management.

6 Operational framework

- 1) Night safaris must have distinct entry points, pathways, and service areas for visitors and staff to ensure no overlap with daytime operations and minimize disruptions. For zoos with both daytime and nighttime operations, providing a separate entrance is mandatory. If the entrance is shared, the design must ensure complete segregation of pathways and facilities beyond the entrance plaza, effectively preventing any operational or physical overlap between day and night activities.
- 2) An officer-in-charge, veterinarians, supervisory staff, zookeepers, guides, and security personnel must be assigned exclusively for the management of night safari. Standard work shifts of about 8–9 hours (in consonance with Government of India norms) should be maintained to prevent overwork.

- 3) Animals displayed in the night safari must not be exhibited during the day, and vice versa, ensuring adequate rest and supporting natural behavioral cycles.
- 4) Night safari operation hours shall align with sunset and seasonal variations to optimize animal visibility and welfare. Visitor access should not extend beyond 11:00 p.m. (IST).
- 5) Depending on the facility's infrastructure and design, both foot-based and Battery-operated Vehicle (BOV)- based options (specifically low-noise variants) may be considered for visitor access. However, guided BOV-based tours are generally preferred as they enhance safety, provide a more controlled visitor experience, and minimize potential disturbances to animals.
- 6) Daytime schedules (e.g., noise levels, cleaning tasks) must not disrupt nighttime operations.
- 7) Lighting and ambiance in night safari should be carefully managed to safeguard animal comfort (see [section 8](#) for more details).
- 8) All relevant personnel should be trained in biology of species housed in the night safari, lighting protocols, and visitor engagement tailored to nighttime conditions.
- 9) Staff training should include emergency response modules to handle potential animal escapes, visitor incidents, or other nighttime emergencies. Detailed action plans should be developed to handle disasters such as fires, natural disasters, or health emergencies involving visitors or animals. Regular drills should be conducted in these aspects to ensure staff readiness.
- 10) Adequately staffed emergency exits, and first aid stations shall be maintained during operational hours.
- 11) CCTV cameras shall be installed along visitor pathways and near enclosures to monitor visitor behavior and ensure animal safety.
- 12) Thorough checks of enclosures, pathways, lighting systems, and visitor facilities should be conducted before and after nighttime operational hours.

- 13) Maintenance issues (e.g., malfunctioning lights, damaged barriers) shall be promptly addressed to safeguard animals and visitors.
- 14) Cleaning in night safari areas must be conducted using non-intrusive methods to maintain cleanliness without disturbing animals or guests. Cleaning activities should be completed before the facility opens to the public, but not scheduled so early as to disrupt the animals' natural behaviors or resting periods.
- 15) Heavy maintenance or noisy activities shall be scheduled outside of visitor hours and implemented in an undisturbed manner.
- 16) Emergency response protocols for nighttime operations, including health crises or animal escapes, must be in place and regularly rehearsed.

7 Design and Infrastructure

- 1) The layout of the night safari must include substantial vegetative buffers between exhibits to reduce disturbances and enhance the naturalistic setting. Additionally, buffer zones shall be established along the periphery of the night safari to mitigate the impact of external artificial lighting, ensuring minimal disruption to the animals and the surrounding environment.
- 2) The shape and dimensions of enclosures must be determined based on the species' behavioral requirements and visitor viewing needs. Viewing and retreat areas shall be optimally designed to provide animals with adequate privacy and retreats while maintaining a balance that ensures visibility for visitors without compromising the animals' well-being. The ground profile and slope of the display area should facilitate easy viewing for visitors while maintaining unobtrusive and species-appropriate retreat spaces for the animals.
- 3) Enclosures must replicate the natural habitats of the species to support their natural behaviors and ecological needs. Designs shall incorporate features such as natural substrates, climbing structures, water bodies, and other enrichment elements. Special attention must be given to species-specific requirements, particularly for non-diurnal species, ensuring adequate shelter, ventilation, and spatial

configurations to promote their well-being. As part of temperature and humidity control measure, install climate control systems, where necessary for sensitive species.

- 4) Enclosures should allow for unrestricted movement and must include an off-display area (consisting of holding rooms and exercise yards (kraal)) and a separate display area. During the day, the animals must have access to the off-exhibit areas with holding rooms having relatively low luminosity and exercise yards with dappled sunlight, thereby mimicking conditions in the wild. Off-exhibit areas shall be shielded from direct light and well-camouflaged at night to prevent disturbance.
- 5) All barriers must be effectively camouflaged using facades or natural vegetation to create a seamless and naturalistic visual environment. The design and camouflaging of barriers must carefully account for the sight level of visitors, ensuring an immersive and unobtrusive viewing experience for both foot-trail and BOV-based visits.
- 6) Off-display areas shall be strategically placed at varied plinth levels and designed with visitor blind spots to obscure them completely from view, ensuring minimal disturbance to the animals.

8 Lighting

- 1) Lighting in night safaris must aim to maintain stable circadian rhythms, ensuring animals exhibit natural activity patterns during their dark phase.
- 2) Light pollution, particularly artificial light at night (ALAN), can have a significant impact on the behavior and welfare of non-diurnal species. Therefore, careful consideration must be given to the design and placement of lighting in night safari facilities. Buffer zones shall be established along the periphery of night safari premises to minimize the impact of external artificial lighting, ensuring minimal disturbance to both animals and the surrounding environment.

- 3) Light intensity should be kept low, ideally below five lux, unless scientific studies demonstrate no adverse effects at higher levels. In enclosures where sensitive species are housed, 0.5 lux is preferred unless otherwise supported by research. Blue light must be avoided since it is known to suppress melatonin production and disrupt biological processes. Red or amber lights, which are less disruptive to circadian rhythms, are strongly recommended for non-diurnal species.
- 4) Moonlight cycles should be recreated to mimic natural illuminance levels throughout the year and across different enclosure locations. Dim white-light mimicking moonlight can be used for species that align with natural nocturnal environments, enhancing visibility for visitors while minimizing animal stress.
- 5) Lighting systems must emulate natural photo-periods, including seasonal variations in intensity, duration, and direction. Dawn–dusk lighting systems are recommended to simulate gradual transitions, replicating the natural progression of light and dark phases.
- 6) Lighting quality, including wavelength, intensity, and duration, must be tailored to species-specific requirements, especially for animals with distinct seasonal adaptations such as molting or reproduction.
- 7) Enclosures should feature shaded zones with varying light levels to accommodate animal preferences and ensure comfort. Photochromatic or diffused lighting systems should be used to minimize glare and stress on animals while maintaining optimal visibility.
- 8) Lighting fixtures must be shielded and directional to prevent spillover into off-exhibit areas and reduce light pollution. They should be designed for flexibility, allowing periodic repositioning to optimize enclosure illumination. Placement of lights should be such that it is away from the direct sight lines of the animals.
- 9) Lighting systems must be regularly evaluated to assess their impact on animal welfare and visitor satisfaction. Monitoring tools, such as light meters and behavioral observation systems, should be used to measure effectiveness and inform adjustments.

- 10) Automated lighting systems that simulate dynamic transitions in intensity, wavelength, and direction are recommended to enhance adaptability and realism.
- 11) Programmable systems integrated with facility management tools can reduce manual oversight and ensure consistent operation.
- 12) Measures must be implemented to reduce light pollution within the zoo and surrounding areas, using barriers, vegetation, and directional lighting. Advanced technologies capable of filtering harmful wavelengths, such as those suppressing melatonin, should be employed.
- 13) Materials for lighting infrastructure must emphasize durability, sustainability, and adherence to green building standards. Energy-efficient systems, such as solar-powered lights or LEDs, must be prioritized to minimize the environmental footprint.
- 14) Lighting installations should be phased-in gradually, enabling zoos to test, learn, and standardize systems before full implementation. Feedback from zoo staff, species experts, and researchers should inform ongoing refinements in lighting design.
- 15) Backup lighting systems must be installed to ensure safety during power outages or emergencies.

9 Husbandry

- 1) The husbandry practices must support the expression of species-specific natural behaviors, including foraging, breeding, and activity cycles. These should be facilitated through well-designed enrichment programs that are regularly rotated to prevent habituation and maintain behavioral stimulation.
- 2) In cases where both daytime zoo and night safari operations are conducted, it is ideal to have separate veterinary facilities for each to ensure dedicated care. However, for sustainability and resource optimization, a common veterinary facility may be utilized, provided that its operations are carefully managed to en-

sure that veterinary care during the day or night does not interfere with or compromise the other.

- 3) In existing zoos, establishing standalone veterinary facilities for nighttime operations may not always be feasible due to infrastructural or spatial limitations. Nevertheless, where practical, standalone facilities are preferable to streamline operations and minimize potential conflicts between daytime and nighttime activities.
- 4) Staff must receive specialized training on the needs and behaviors of nocturnal species, including welfare practices and emergency management.
- 5) Social groups must reflect species-specific requirements to encourage positive interactions.
- 6) Many non-diurnal species have specialized dietary requirements. Zoos must establish feeding schedules that mimic natural diets, including the provision of animal protein or other specific nutritional components as needed. Only species for which these dietary requirements can be met sustainably should be housed in night safari. Align feeding schedules with the natural activity cycles of nocturnal species, offering varied diets that mimic natural foraging or hunting experiences.

10 Animal Welfare

- 1) By incorporating the principles of the *Five Domains Model*, zoos can ensure the welfare of animals through thoughtful and targeted practices: Provide species-specific diets aligned with natural cycles; design enclosures replicating natural habitats with minimal stressors; implement regular health monitoring and emergency care protocols; facilitate natural behaviors through enrichment and autonomy; and promote overall well-being by minimizing stress and fostering positive mental states.
- 2) Only non-diurnal species shall be displayed. The inclusion of highly sensitive non-diurnal species (e.g. Lemuriformes, Tarsiers, Pangolins), or those particularly susceptible to stress from human presence or artificial lighting due to their

elusive behavior or specialized ecological needs should be avoided until detailed husbandry protocols for such species are framed by the CZA.

- 3) In zoos operating both daytime exhibits and night safari, individuals displayed at night must not be exhibited during the day.
- 4) Animal welfare must take precedence over visitor experience or revenue generation. Practices compromising animal health or natural behaviors for entertainment purposes shall be strictly prohibited.
- 5) Animals must not be housed in cramped enclosures and must have access to private or hidden areas to retreat from visitors or stimuli.
- 6) Using high-beam lights, torches, or flashing lights to show animals to visitors shall be strictly prohibited, except in cases where such practices are scientifically established not to cause any disturbance (e.g., observing eye-shine in crocodylians). Even in these cases, their use must be strictly regulated and limited to accompanying educators to ensure proper control and minimize potential impacts.
- 7) Feeding areas must be designed to minimize visibility and disturbance from visitors, ensuring a stress-free environment for the animals. Under no circumstances shall animals be lured or baited to facilitate viewing by visitors.
- 8) Use non-invasive tools such as night-vision cameras and photometers to monitor stress indicators (e.g., pacing, withdrawal, aggression) and measure light intensity regularly. Minimally invasive techniques, such as salivary melatonin monitoring, should be explored to evaluate circadian health in non-diurnal species.
- 9) Conduct routine health checks tailored to the activity cycles of nocturnal species, ensuring detailed records are maintained to track welfare patterns.
- 10) Visitor paths must be carefully designated to prevent overcrowding. Visitors must not be allowed to congregate at enclosures solely because animals are in easily visible locations.

- 11) Visitor durations should be limited to a maximum of one hour for BOV-based tours and two hours for foot-trail visits to minimize disturbances to the animals and ensure their well-being.
- 12) Visitors must be educated to maintain low noise levels and avoid using flashlights or other devices to provoke animal activity.
- 13) No rescued animals, lactating females, recently birthed individuals, or compromised physiological states (e.g., hand-rearing facilities, injured animals) shall be displayed.
- 14) Animals must be rotated between on-display and off-display areas to provide rest and minimize exposure to visitors.

11 Visitor management and education

- 1) The display may be themed to group animals by habitat, region, or behavior, creating cohesive and educational storytelling experiences. Subtle soundscapes and interactive tools, such as night-vision equipment or audio stations for animal calls may be incorporated to enhance visitor experience.
- 2) Construct elevated or enclosed viewing platforms to offer unobtrusive perspectives of exhibits.
- 3) Create a gradual transition zone (approximately 500 meters) at the entrance to acclimate visitors' eyes to darkness, enhancing their experience.
- 4) Visitor pathways should be designed to ensure that they are:
 - i) Dimly lit with non-intrusive lighting.
 - ii) Non-slip and wheelchair-accessible, complying with national accessibility standards.
 - iii) Designed to prevent overcrowding, maintain safe distances from enclosures, and use barriers or vegetation to reduce disturbances.

- 5) Ensure all foot trails are guided, with no unguided access permitted. Guided tours should be led by trained educators, incorporating storytelling to connect visitors emotionally to conservation efforts. Limit foot trails to 1 km or less, with a guide-to-visitor ratio of 1:6-8 to ensure safety and provide meaningful interactions.
- 6) Visitors traveling in BOV must remain seated for the duration of the visit, with no disembarking permitted to ensure their safety and minimize disturbances to animals.
- 7) Illuminated, multilingual signage shall be installed near enclosures along foot trails to provide species-specific information, including behaviors, habitats, and conservation status. These signages may include QR codes linking to multimedia content, such as videos or interactive guides, to enhance educational experience. For BOV-based tours, personalized audio guides shall be employed, as disembarking to read signage is not permitted, and viewing signage from the BOV is impractical.
- 8) Place clear, informative signs throughout the safari, explaining the importance of minimizing light to protect the animals' natural behaviors. Highlight the adverse effects of flashes on the animals and the importance of preserving their environment.
- 9) Educate visitors on maintaining low noise levels and respecting animal privacy through pre-visit briefings, posted guidelines, and clear codes of conduct.
- 10) Conduct interactive sessions or talks tailored to all age groups, focusing on nocturnal ecology, species-specific challenges, and conservation initiatives. Communicate conservation and educational goals transparently through pre-visit materials, signage, and outreach programs. Highlight animal welfare practices and sustainability initiatives to build trust and address ethical concerns.
- 11) To ensure minimal disruption to animals, use of flash photography/high-beam lights and wearing reflective clothing shall be prohibited. Visitors should also be prohibited from carrying personal torches or high-beam lights.

- 12) Resting areas with subtle lighting and seating should be located distantly from the enclosures to avoid disturbances to animals and preferably be restricted to the entrance plaza.
- 13) Amenities such as drinking water stations, restrooms, and refreshment areas shall be limited to the entrance plaza. Avoid single-use plastics in refreshment areas, providing reusable utensils and eco-friendly alternatives. Share tips with visitors on minimizing their ecological footprint during visits. Place recycling bins throughout the premises, clearly marked for visitor convenience.
- 14) Install emergency provisions, including clearly marked exits, first-aid stations, and fire extinguishers, with glow-in-the-dark signage at assembly points.
- 15) Designate photography zones with non-intrusive lighting placed away from enclosures or in the entrance plaza.
- 16) Implement digital ticketing systems with time-slot reservations to streamline entry and minimize waiting times. Use dynamic pricing models to manage visitor demand.
- 17) To prevent overcrowding, regulate visitor numbers in sensitive areas using timed entry slots, directional arrows, and capacity limits.
- 18) Monitor visitor counts at entry and exit points to ensure adherence to carrying capacity guidelines. Real-time tracking systems should be implemented to monitor the number of visitors inside the facility, ensuring total occupancy remains within permitted limits. Additionally, systems must be in place to verify that all visitors have exited the premises by the designated closing time.
- 19) Establish an evacuation plan with designated assembly points and clear guidelines for staff and visitors.



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