

Rethinking Captive Wild Animal Welfare in Tropical Environments

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ABSTRACT

Captive wildlife care in tropical environments presents unique challenges that demand context-specific approaches to animal welfare. Traditional welfare guidelines, originally developed for intensively farmed livestock in temperate regions, often fail to account for the environmental, political, social, and economic complexities of Southeast Asia. As a result, these frameworks are inadequate for addressing the needs of both native and non-native species in tropical zoological facilities. Effective welfare requires rethinking how we manage animals and designing practices that meet the diverse biological and ecological requirements of these captive wildlife. Creating an optimal environment begins with a deep understanding of species-specific needs. Nutritionally balanced and behaviourally engaging diets, such as scatter-feeding carnivores to mimic hunting or providing browse for browsers like Sambar deer, banteng and serow, may stimulate natural foraging behaviours and reduce feeding-related stress. Likewise, climate-responsive enclosures that incorporate cooling zones, varied vertical structures, and sensory enrichment help reduce thermal strain and provide opportunities for a broader range of species-typical behaviours, from brachiation in non-human primates to wallowing in tapirs and elephants. Welfare, however, extends beyond physical infrastructure. Environmental enrichment is central to modern husbandry, encompassing cognitive challenges, social opportunities, sensory stimulation, and habitat modifications that encourage exploration and activity. Studies demonstrate that such enrichment reduces stress and stereotypies, improves physical condition, and enhances mental stimulation. These programmes also engage visitors, fostering a deeper appreciation of wildlife and support for conservation. Sustainable welfare practices in tropical facilities rely on collaboration. Regular welfare assessments, evidence-based enrichment, targeted staff training, and proactive veterinary care are essential for maintaining health and optimising management outcomes. By integrating science, practical husbandry, and community engagement, zoological facilities in Southeast Asia can enhance welfare standards in ways that are species-appropriate and regionally relevant, positioning the region as a leader in progressive captive wildlife management.

