

Temperature Tolerance and Survival in Captivity of Captive Wildlife During a Heat Wave in India

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INTRODUCTION

May 2015 has been the hottest summer in India, and the daily average temperatures have reached 118-122 degrees F (48-50 degrees C). The survival of people and captive wildlife in major cities has been threatened. In New Delhi, India's Meteorological Department has sounded a red alert for several states as the death toll from the severe heat wave climbed to 1000 deaths.

Like humans, animals suffer, particularly when they are left in the direct sun, and they do not get adequate water. Wild animals and avian species, both free ranging and in captivity, are particularly vulnerable to heat stroke. After visiting many zoos in India during the summer, we noticed at a great deal of captive wildlife is facing intense heat, which is causing behavioral and health problems. Maintenance temperatures exceeding 86 degrees F (30 degrees C) should be avoided as much as possible.

Sayaji Baug Zoo in Vadodara, western Gujarat, is helping animals beat the heat with special measures. Bird cages have been given special covers. Trays of ice have been placed inside the enclosure for Himalayan bears, and tigers are being splashed with water twice a day.

IDENTIFYING HEAT STROKE

Heat stroke symptoms may include hot, red skin; changes in consciousness; weak pulse; and shallow breathing or gasping. Body temperature can be very high.

Identifying a heat stroke stressed animal is the major task. Birds will open their wings away from their bodies. This is a sign of exhaustion. In other species, hyperthermia and dehydration are the main symptoms. Nocturnal wildlife suffering from heat stroke will be out in the daytime. Other animals may display a loss of balance, confusion, giddiness, lethargy or unresponsiveness. Arboreal animals may be on the ground.

Provision of Artificial Shade Made of Natural Fibre (Jute) in the Wild Animal Exhibit

Artificial shade with natural cooling system box

- 4 ft x 2.5 ft x 3.5 ft
- Materials used: Wood & jute rope.
- The box is designed so that an animal inside it is visible from all angles. Staff can clearly confirm that no leopard is in the box before they enter the enclosure for feeding or cleaning.
- During hot weather, staff can shower water on the box to give a cooling effect for the animals.



Artificial shade box for leopard. MyVets Charitable Trust & Research Centre

Species-Specific Diet Plans & Enrichment for Heat Stroke Prevention

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Category	Wild Animals	Diet Plans	Exhibit Enrichment	Heat Stroke Symptoms
Herbivores	Chinkara, hog deer, buffalo, blackbuck, nilgai, rhinoceros, hippopotamus, elephant, etc.	<ul style="list-style-type: none"> •Watermelon •Cucumber •Mint leaves •Electrolytes •Vit. C, E, & B-complex 	<ul style="list-style-type: none"> •Wallowing pool •Cooler •Cover the windows of the holding area with hay 2 inches thick and sprinkle with water often 	<ul style="list-style-type: none"> •Rapid pulse •Hot patches on skin •Hyperthermia •Rapid breathing
Carnivores	Leopard, lion, tiger, hyena, jackal, fox, wolf, etc.	<ul style="list-style-type: none"> •Protein diet reduction •Rock salt stones to lick •Ad libidum fresh water supply •Cold water •Vit. C, E, & B-complex •Cold milk 	<ul style="list-style-type: none"> •Air cooler •Water sprinkler •Cover the windows of the holding area with hay 2 inches thick, and sprinkle the hay with water continuously in the afternoon 	<ul style="list-style-type: none"> •Epistaxis •Rapid breathing •Fever •Excessive drooling •Congested mucous membrane
Avian	Macaw, African grey parrot, flamingo, aquatic birds, pheasant, etc.	<ul style="list-style-type: none"> •Seasonal fruits •Watermelon •Electrolytes •Vit. C, E, & B-complex 	<ul style="list-style-type: none"> •Water sprinkler on enclosures •Plantation inside exhibits •Cover the cages with hay 2 inches thick, and sprinkle the hay with water continuously •Artificial pond 	<ul style="list-style-type: none"> •Opening of the wing for longer period than usual •Mouth breathing (gaspings) •Hyperthermia •Spreading of wings
Reptiles	Python, cobra, crocodile, etc.	<ul style="list-style-type: none"> •Provide fish instead of red meat in summer •Electrolytes •Vit. C, E, & B-complex 	<ul style="list-style-type: none"> •Provide shade in enclosure •Cool, deep water •Pond •Plantings in exhibit for basking •Hide boards 	<ul style="list-style-type: none"> •Dry skin •Hyperthermia •Gaspings

