ex-situ updates

Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण

A Quarterly Newsletter of the Central Zoo Authority

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Editorial Board

Cover photograph

Photo credit: Alankar Jha

The Red Panda (*Ailurus fulgens*) is a small mammal of the Himalaya, almost the size of a Jungle Cat (head and body length 51-64 cm; tail 28-48 cm), with a bright chestnut coat and ringed tail. It is distributed in the Himalaya from Central Nepal through northern Burma and in the mountains of southwestern China (Sichuan, Yunnan, and Xizang provinces) in the altitudinal range between 4,900 and 13,000 feet. It prefers mountainous mixed deciduous and conifer forests, especially those with old trees and dense understories of bamboo. The IUCN estimates that fewer than 2500 mature individuals survive in the world. A planned breeding Red Panda program was initiated in the early 1990s as a part of the Global Red Panda Management Program at the Padmaja Naidu Zoological Park Darjeeling and 4 Red Pandas have been released till date.

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FROM THE DESK OF MEMBER SECRETARY

Ex-situ Updates was started in March 2012 as a quarterly newsletter devoted to various issues pertaining to ex-situ conservation in India, with the primary aims of creating awareness about zoos in the country and highlighting various initiatives taken by zoos and the Central Zoo Authority (CZA).

One year later, I see a overwhelming response from the readers. This response gives immense pleasure and encouragement to the team behind Ex-situ Updates, which has been putting in considerable efforts to bring the quarterly update out on time and to ensure that high standards are maintained. I say 'Thank you very much' to all the contributors.

The current issue (of Vol. II, of 2013) focuses on various actions and activities undertaken by the CZA through various committees.

We promised that one zoo would be highlighted in each issue. In this issue, Padmaja Naidu Himalayan Zoological Park, Darjeeling, established in 1958, has been focused on. This zoo is one of the best managed Himalayan zoos in the country. It has seen all-positive changes since then. Recently a master (layout) plan was prepared for the zoo along with a 20-year master plan.

Another highlight of this issue is an introduction to foreign zoos to share best management practices among zoos. In addition to CZA news and updates, this issue looks at the conservation breeding programme undertaken for the snow leopard by Darjeeling Zoo and highlights various actions taken for improvement.

The newsletter also gives insights into important sections of the Wildlife (P) Act, Recognition of Zoo Rules, 2009 and National Zoo Policy, 1998 that zoo directors must consider when managing zoos.

I am sure that this update will continue to gain appreciation from the zoo community and conservationists within the country and abroad.

(B.S Bonal)

RELEVANT SECTIONS OF THE WILD LIFE (PROTECTION) ACT 1972

Section 33

Control of Sanctuaries:- The Chief Wildlife Warden shall be the authority who shall control, manage and maintain all sanctuaries and for that purpose, within the limits of any sanctuary:-

(a) may construct such roads, bridges, building, fences or barrier gates and carry out such other works as he may consider necessary for the purpose of such sanctuary [Provided that no construction of commercial lodges, hotels, zoos and safari parks shall be undertaken inside a sanctuary except with the prior approval of the National Board.]

Section 42

Certificate of ownership – The Chief Wildlife Warden may, for the purposes of Sec. 40, issue a certificate of ownership in such form, as may be prescribed, to any person who, in his opinion, is in lawful possession of any wild animal or any animal article, trophy, or uncured trophy, and may, where possible, mark, in the prescribed manner, such animal article, trophy or uncured trophy for the purposes of Identification. [Provided that before issuing the certificate of ownership in respect of any captive animal the Chief wildlife warden shall ensure that the applicant has adequate facilities for housing, maintenance and upkeep of the animals].

Section 43

Regulation of transfer of animal etc.

(1) No person having in his possession captive animal, animal article, trophy or uncured trophy in respect of which he has a certificate of ownership shall transfer by way of sale or offer for slae or by any other mode of consideration of commercial nature, such animal or article or trphy or uncured trophy.

(2) Where a person transfers or transports from the State in which he resides to another State or acquires by transfer from outside the State any such animal, animal article, trophy or uncured trophy as referred to in sub-section (1) in respect of which he has a certificate of ownership, he shall, within thirty days of the transfer or transport, report the transfer or transport to the Chief Wildlife Warden or the authorised officer within whose jurisdiction the transfer or transport is effected.

(3) Nothing in this section shall apply
   (a) to tail feather of peacock and animal articles or trophies made therefrom
   (b) to transfer captive animals between recognised zoos subject to the provisions of Sec 38-1 or transfe mongst zoos or public museum.

Photo credit: Alankar Jha

CONSERVATION BREEDING PROGRAMME OF SNOW LEOPARD

– A. K. Jha and U. Rai

The Snow Leopard has been listed as endangered under schedule I of the Wild Life (Protection) Act 1972 and IUCN. The Conservation Breeding Programme of the Central Zoo Authority lists the species in the 25th position. The major threats faced by it include loss of its prey base, modification of its habitat, hunting for its prized pelt and simply retribution of its prey species.

In India the snow leopard's range extends along the entire Himalayan chain from Kashmir to Bhutan. Northwards, its territory extends into Tibet, Central Asia and the Altais. Each snow leopard inhabits a defined home range. However, these home ranges overlap, and snow leopards do not defend them the way most aggressively territorial animals do. Home range sizes vary greatly. It is thought that in Nepal and other areas where prey is abundant, cats inhabit home ranges as small as 30-65 square kilometres. In areas where there is less prey, such as Mongolia, snow leopards need more land in order to survive. Their home ranges may be greater than 1,000 square kilometers in extent. In the wild, the range of the snow leopard includes alpine meadows and treeless, rocky, mountainous regions of Central Asia, from Russia and Mongolia through China to the Himalayan regions of Afghanistan, Pakistan and India. Snow leopards generally live at elevations between 5,700 and 18,000 feet but may be seen at lower elevations when they follow prey in winter.

Snow Leopards are generally solitary, but groups of two to four may form during the breeding season or with the birth of cubs (Schaller 1977, Jackson and Ahlborn 1988).The snow leopard is somewhere between the small cats and the great cats in that it cannot purr like the small cats and cannot roar like the true big cats. Snow leopards moan when attracting a mate and greet each other with a "chuffing" sound.

Sexual maturity is reached at 2-3 years' age. When searching for a mate, a snow leopard lays down scents with urine and faeces. Copulation occurs many times over a 3-6 day period. The male usually grips the fur on the female's neck when he mounts, and at copulatory climax he gives a loud piercing yowl. The gestation period is 96-105 days, and the litter size is two to five. The preferred diet in the wild includes blue sheep, wild goat, markhor, urial, deer, boar, marmots, woolly hare, various rodents, snow cock and livestock. In India, snow leopards in captivity are mostly fed with beef, mutton, chicken and raw eggs.

THE SNOW LEOPARD PROJECT AT PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK

The snow leopard was listed as an internationally endangered species in 1974, and populations are continuing to decline even today. There are as few as 3,500 snow leopards left in all the 12 countries where they are still found, and hence a global breeding programme has been established to create an insurance population of snow leopards in zoos, in case of catastrophic declines in the wild. The programme is targeted towards ensuring strong genetic variations so that if they are ever released in the wild, the leopards will produce healthy cubs and sustainable populations. The species has been the subject of intensive focus since 1976, when an international snow leopard studbook was compiled (Blomqvist 1978). It is a source of genealogical data of the individual animals of a particular zoopopulation. A studbook can help recommend which animals should breed with which others and how often. According to the International Studbook (2008), the total global population of snow leopards is maintained in 205 institutions (other than in China), with 445 (206:239) snow leopards being exhibited. In India, captive snow leopards are maintained in Padmaja Naidu Himalayan Zoological Park,

with a total of 10 individuals (5:5), and Himalayan Zoological Park, Gangtok, Sikkim, with one individual (0:1).

Apart from a number of *in-situ* conservation efforts, a global breeding programme is in place. Darjeeling Zoo has been a part of this initiative since 1986. It was selected as an ideal site for this captive breeding project. Experts Dr. Ingo Rieger and D. Walzthoeny, from the USA, inspected the site in July 1983 and gave their approval. The site selected for the off-display conservation breeding centre is in the north-western corner of Jawahar Prabhat (Birch Hill), at 27°N, 88°E. The altitude is 6,900 feet, a little above Lebong Cart Road, within the zoological park, opposite St. Joseph's College, Darjeeling. Darjeeling Zoo achieved commendable success in breeding the snow leopard for conservation because of the construction of the off-display Conservation Breeding Centre, popularly known as CBC. This gave the animals the seclusion and right environment needed for breeding, being away from the normal chaos in a display area of a zoo.

This was the first instance of an Asian zoo participating in the Snow Leopard Master Plan, conceptualized by Mrs. Helen Freeman, President of the International Leopard Trust and species coordinator of the Species Survival Plan for snow leopards. This was also the first *ex-situ* breeding project in India. The project was initiated with founder individuals from different zoos abroad in 1986. The details are given below.

- A pair of unrelated snow leopards were flown to Darjeeling Zoo from Zurich Zoo via London and New Delhi on 21 March 1986. These were Kashi, a female, and Vishna, a male. The female was born on 26 August 1983 in Zurich Zoo. The male was born on 23 June 1978 in Helsinki Zoo.
- Another pair, Hank (male) and Persia (female) came to Darjeeling Zoo from the USA on 16 January 1989. Hank was born at Litterock on 6 June 1985, and Persia was born at San Antonio on April 23 1980.The pair gave birth to two female cubs on 20 May 1989. This was the first successful breeding of snow leopards in Darjeeling.
- Quizil(male, born on 23 May 1990 at Zurich), Quila (female, born on 23 May 1990 at Zurich) and Quetta (female, born on 23 May 1990 at Zurich) were added to the collection of the zoological park on 28 January 1992 to include new blood and continue a planned breeding programme at Darjeeling Zoo.
- Another male, Tyson, born on 8 August 1995 arrived from Hunbstrnd at Darjeeling Zoo on 27 January 2000 for the same purpose.
- Two females, Neeta and Meeta, rescued from the Leh-Ladakh region of Jammu and Kashmir, were airlifted to Darjeeling by a chartered plane of the Ministry of Defense on 17 May 2000, again to continue with the breeding project. Unfortunately Meeta died within a few days of her arrival. From 1987 to 2005, 46 snow leopards were born in the zoo, with a sex ratio of 23 males to 18 females (5 cubs of unknown sex). The litter size in the zoo varied from one to four, with an average of 2.2 cubs/litter.
- In the last 26 years, there have been a total of 57 snow leopard births in captivity at Padmaja Naidu Himalayan Zoological Park, Darjeeling.
- The current stock of PNHZ Park (5:5) includes one progeny from the founder stock and one male, aged 17 years, from the founder stock.
- The Snow Leopard Breeding Project at Padmaja Naidu Himalayan Zoological Park, Darjeeling is and the only successful breeding programme of the species in South-East Asia.
- For proper identification, all individual animals are microchipped, and records are maintained using ARKS, SPARKS, and ZIMS. The updated records are being sent to the keeper of the National Studbook at Wildlife Institute of India (WII) and the keeper of the International Studbook at Helsinki. The studbook records are demographically and genetically analysed, and feedback is provided for breeding the species for conservation.
- Genetic analysis of the captive stock is carried out at the Laboratory for Conservation of endangered Species (LaCONES) to determine the genetic diversity in the stock.
- Feed evaluation and feed recommendation was carried out by the Indian Veterinary Research Institute in 2009.
- Research is being carried out continuously so that this very special and sensitive project can become a model for other such conservation breeding projects in suitable locations. A short-term project funded by the Central Zoo Authority is an ongoing project at the park. The project aims to study the snow leopards in an *ex-situ* facility.
- In 2003, Padmaja Naidu Himalayan Zoological Park had 18 snow leopards (9:9), one of the largest captive populations in a single zoo in the world. This was a record for zoos up to May 2006.
- The next step taken was to establish four or five stable captive populations of snow leopards at different high-altitude zoos in the country, before contemplating releasing/stocking animals in the wild. In 2004, a pair of snow leopards was sent from Darjeeling Zoo to each of Gangtok, Nainital and Shimla zoos to start subsidiary snow leopard breeding centres there.
- PNHZ Park currently holds 10 snow leopards (5:5). It is hoped that the successful mating of the present breeding pairs will result in the production of litters of cubs and

boost the trend of breeding snow leopards. A new bloodline is being introduced by bringing animals from Leipzig, Lodz and Nurnberg. Three females were proposed to be brought, and one has already reached the park.

- The park once again took the initiative of building an off-display breeding centre at Topkedara, Darjeeling, in 2011, with the purpose of shifting some more animals and then breeding them consecutively.

PROBLEMS FACED

The breeding programme has not been entirely free of obstacles. While the initial period was spent on mastering a breeding technique, of late certain management decisions and veterinary problems have been hindrances.For example, shifting six of the animals to Shimla, Nainital and Gangtok without assessing the management facilities and training capacities of the zoos at these locations was not a very positive decision in the long run. All these animals, except one, died without contributing positively to the population, as all the pairs sent were siblings and could not be bred. The Conservation Breeding Centre should have been shifted long ago from its present location. It is surrounded by human habitations, and the location is not totally free from human imprints or human-borne diseases. The new CBC at Topkedara, will hopefully be free of these.

The other hindrance faced in breeding this species for conservation was cub mortality. During 2001-2011, 18 cubs less than 1 year of age died.

There were no frequent occurrences of infectious or non-infectious diseases; the cub mortality was mainly due to fractures of limbs, pneumonia and worm infestations.

Photo credit: Alankar Jha

The author is the Director of Padmaja Naidu Zoological Park, Darjeeling, West Bengal

Present stock of Snow leopards *(Uncia uncia)* at Padmaja Naidu Himalayan Zoological Park, Darjeeling

Name	International Studbook number	Sex	Birth date	Sire	Dam	Location	Transponder number	National Studbook number
Tyson	1850	M	8.8.1995	1723	1285	Hunbstrnd Darjeeling	00-0611-163B	00014
Karan	1897	M	23.10.1995	1059	1474	Darjeeling	981098102057256	00016
Teesta	2399	F	29 .3.2002	1897	2228	Darjeeling	00-0611-4DBI	00040
Budh	2401	M	19.6.2002	1850	1797	Darjeeling	00-0610-FA9B	00038
Prabhat	2405	M	8.7.2002	1850	1899	Darjeeling	00-0618-24E0	00034
Ritu	2538	F	11.3.2004	1897	2228	Darjeeling	981098102056547	00037
Yashmin	2540	F	25.5.2004	1850	1797	Darjeeling	00-00F6-8A38	00044
Rare	2994	F	19.6.2012	2405	2538	Darjeeling	-	
Kim	2846	F	29.4.2010	2566	2430	Nurnberg, Germany	968000005848177	
Subash	2402	M	8.7.2002	1850	1899	Darjeeling	00-9617-C8C5	00035

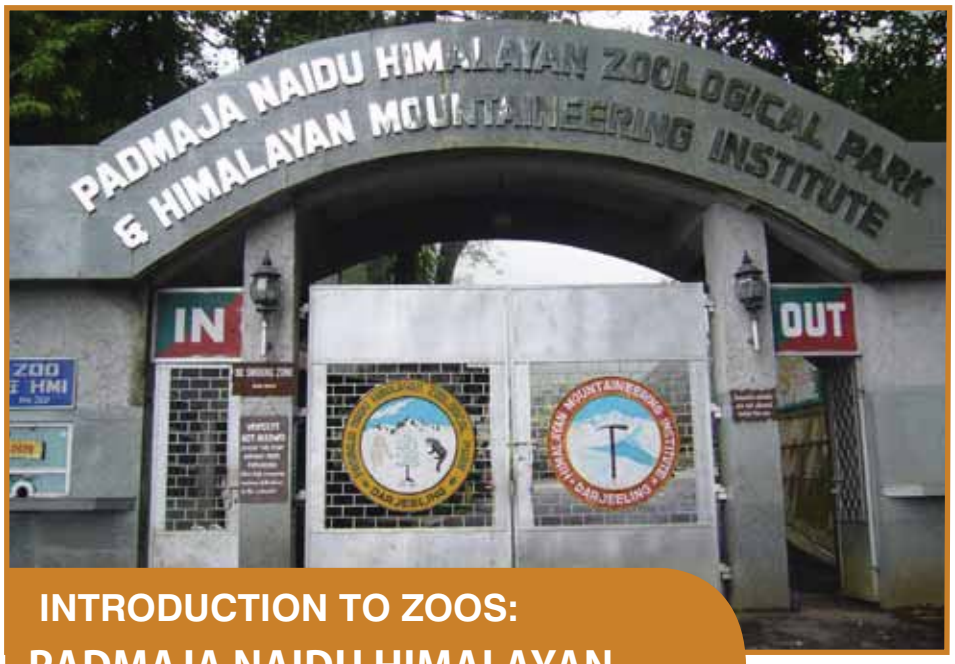


Photo credit: Alankar Jha

INTRODUCTION TO ZOOS:

PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK, DARJEELING

– A.K. Jha

The Padmaja Naidu Himalayan Zoological Park, Darjeeling formerly known as Himalayan Zoological Park, Darjeeling, was established on 14 August, 1958. The zoological park is located at an altitude of 7000 feet (2150 m) on Jawahar Parbat (Birch Hill), at the northern fringe of Darjeeling town. In 1975, the late Smt. Indira Gandhi, then the prime minister of India, dedicated the Himalayan Zoological Park to the memory of the late Smt. Padmaja Naidu, ex-governor of West Bengal, and the park was renamed as Padmaja Naidu Himalayan Zoological Park. The hill town of Darjeeling is about 85 km from the nearest airport (Bagdogra), and the main railway junction (NJP) is the same distance from the town.

The zoological park is situated in the lower Himalaya at 27°3'N, 88°18'E, in an area of 67.56 acres. The park has the natural woods that originally existed in the area, which correspond to Champion's type 11B/CI (Northern Montane/East Himalayan Wet Temperate Forest). The park's forests are home to a variety of eastern Himalayan animals, some of which can still be seen in the estate.

Birch Hill (Jawahar Parbat), where the zoological park is presently located, was originally a private property and was gifted in 1877 by Mr. William Lloyd to the "Official Trustee of Bengal" on behalf of the "Trust Children of Samuel Smith", and in terms of the said trust to the Government of Bengal for the purpose of "Protection of the Forest at and around Birch Hill and its maintenance as a place of research for the residents etc. vide para 4 of Letter No. 910T dated 29/6/1877 from S.C. Bayley Esq. C.S.I., Secretary to the Government of Bengal, Revenue Department (Land Revenue) to the Secretary to the Board of Revenue". Material changes and improvements were effected by the late Sir Ashley Eden in the area. It had a large pavilion and a grotto in the ground.

Sri Tenzing Sherpa, a resident of Darjeeling and a famous mountaineer, stood with Sir Edmund Hillary, from New Zealand, for the first time atop the highest mountain of the world, Mount Everest, on 29th of May 1953. And to commemorate the 'conquest' of Everest and to encourage the adventurous sport of mountaineering, the Himalayan Mountaineering Institute was established at Birch Hill in 1954. To afford an opportunity to study the typical Himalayan flora and fauna to the students of Himalayan Mountaineering Institute and others, the Council of Ministers, Government of West Bengal, decided on 22 January 1956 to set up a zoological park at Darjeeling.TheA post of Supervising Officer, of the rank of Deputy Conservator of Forests, was created, and Shri D.K. Dey, of the Madras Senior Forest Service, who was on deputation to the Government of West Bengal, was appointed to this post. He was the curator of the park and the keeper of the zoo.

A total of 117.50 acres (47.55 ha) of forested land, 78.50 acres (31.77 ha) in Birch Hill Park and 39.00 acres (15.78 ha) in Lebong Park, outside the HMI area, was transferred from Darjeeling Division for creating the zoological park. Shri Dey was asked to prepare a draft scheme with plans and estimates for setting up the park. The scheme was jointly implemented by the Government of India and the Government of West Bengal as a part of their efforts in developing the Himalayan Mountaineering Institute.

To begin, with a structure with concrete boulders was created to house common leopards at the back of the then range office. A huge tiger house was constructed for housing a pair of Siberian tigers presented by Mr. Nikita Khrushchev, the then premier of the U.S.S.R. Government to the Government of India.

The vegetation of the park consists of the natural woods that originally existed throughout the area on which the town of Darjeeling was established by the British about 170 years ago. The town was established by clearing the woods then. The scenery here is certainly the grandest in the region for the trees are old and stately, and their gnarled bark is covered with lichen and moss. These impart to the landscape a russet-brown hue picked out with silvery specks. These woods, with their wealth of vegetation, stone walls and old moss-covered, creeper-bound trees, show what Darjeeling was like when it was first discovered. This is the only part of the station where the fine forests that once covered the hillside have not been ruthlessly swept away by house

Photo credit: Alankar Jha

Blue sheep

builders, though a few survivors of the forest giants may still be seen here and there. This forest is also called Heritage Forest as it is reminiscent of the original forest of Darjeeling. Recorded history shows that the park forests held a varied eastern Himalayan fauna, and even until five decades ago, the Birch Hill forests harboured species such as the Himalayan black bear, barking deer, Himalayan cat species, squirrels, civets, Hogson's flying squirrel and orange-bellied Himalayan squirrel. The Indian fox, the red fox and Asiatic jackals were a common sight. Some of these species can be seen even now in the estate. The recorded history of the area tells us that, besides mammals, there was a colourful variety of mountain birds in this locality. With the development of the hill station of Darjeeling and a great increase in the population, the fauna in this area gradually vanished through mankind's depredations.

The history of the park shows us the amazing vision of our past managers. In 1982, when the park was thinking of the first *ex-situ* conservation breeding project of India, in the form of Project Snow Leopard, its objectives were (a) establishing a breeding centre to acclimatize, rear, breed and multiply the endangered species and then making efforts to establish subsidiary breeding centres at suitable locations in the Himalaya and if possible to release animals back in the wild and (b) supporting research and education and providing employment opportunities to locals. The project proposal also spoke of a 'nucleus stock' of the species, nowadays called a founder population. The concept note, prepared by then director, Dr. R. K. Lahiri, with the help of Mr. Hari Dang, Rector, St. Paul's School, and Mr. S. V. Krishnan, IAS, Chief Secretary of West Bengal, indicated the deep level of consultations and commitment and a very high level of vision. The enclosures constructed for tigers and Himalayan black bears are so suitable that even after 50 years very minimal changes have been carried out in them. This vision was furthered by the subsequent directors such as Mr. Vinod Rishi and Mr. N. C. Bahuguna. The first management plan of the park was prepared for the period 2000-2010 by Mr. B. R. Sharma, and though it was not approved, it remained a guideline for management of the park. Subsequently, the Central Zoo Authority (CZA) took the initiative of preparing a master layout plan and master plan for the all parks in country. The Sharma Plan encompassed the management priorities, enclosure designs and enrichments and described in detail the history of the park. The current master layout plan, which has been approved by the CZA, covers the breeding centres at Dow Hill and Topkeydara, apart from the Darjeeling facility.

The zoological park is divided into the following zones.

Main Display Zone. This consists of the Main Zoological Park, with its animal enclosures, administrative building, hospital, kitchen, rest house, Himalayan Nature Interpretation Centre, Director's bungalow, main entrance, etc. In the Display Zone, the topographical features of the park have been taken advantage of to display the animals. The enclosure of the tiger, the ultimate predator, has been placed at the top of the hillock, and lower down, in the second tier, are the enclosures of the leopard, snow leopard, clouded leopard, Tibetan wolf, lesser cats, etc. In the third tier, at the base, near the boundary wall, are the Himalayan black bear, red panda, pheasants. The three tiers and the undisturbed jungle at the very base create the image of a biological pyramid in three dimensions in the zoological park.

Conservation Breeding Centre. This centre has two snow leopard enclosures and two red panda enclosures as well as a nursery for hand rearing young animals.

Wilderness Zone. There is virgin forest on the northern and eastern slopes, with a nature trail and an approach road to the Conservation Breeding Centre. A post mortem room and a crematorium are also located in the same area. The area outside the main zoo premises is where the staff quarters, fixed demand holding and forested land are situated.

The records available in the zoo mention the following activities of the park in the past years.

1980-1990 - Towards the end of 1978-1979, 108 assorted birds were purchased from Bihar. One sloth bear, four axis deer and three sambar were brought from Nandankanan Zoological Park, and one goral (female) and one Assamese macaque (male) were born. In 1980-1981, the park was granted permission by the Forest Directorate for capturing some rare

high-altitude animals and conducting research on them. Yak calves, barking deer, Himalayan black bears and mongooses were procured from the wild. Seven collaborative research schemes submitted to the Department of Science and Technology on 16 December 1980 seeking financial assistance were approved. With the infrastructure building up gradually, animal collection activities were initiated for undertaking. The project 'Studies on Ecology, Reproductive Biology and Conservation of the Endangered Salamander of the Eastern Himalaya, *Tylototriton verrucosus'* was approved was by the Department of Science and Technology. New projects were drawn up to establish a display aviary within the campus, and a pheasant breeding farm was established in the Lebong sector of the zoo. A special horticulture programme was envisaged, and afforestation of the park began with about 3500 saplings of indigenous plants during the monsoon. Regular lectures were given by the director of the park for creating awareness about high-altitude fauna and flora. Prominent trees within the park area were labeled with scientific names to develop interest in nature study. A direct pipeline providing a connection with the Jalaphar area was laid under a joint project of the society with the H.M.I. For the first time the society participated in the hill development programme of the Government of West Bengal and received an amount of Rs. 5 lakhs for the following schemes:

- Schemes for procurement of representatives of the Himalayan fauna
- Scheme for pheasant farming
- Scheme for afforestation, soil conservation, water conservation and improvement of the drainage system in the park
- Scheme for construction of new roads and pathways.

Red pandas, satyr tragopans, etc. were born. Exchange programmes were implemented within India and outside the country. A mini laboratory equipped with a microscope, centrifuge machine and reagents was set up. In 1982-1983, the veterinary dispensary attached to the park was improved.

In 1983-1984, the Hill Affairs Branch of the Government of West Bengal provided funds for improving and developing the park under the following schemes:

- Procurement of representative Himalayan animals through purchase, acquisition, trapping, etc.
- Scheme of construction of planned exhibition cages on modern lines for displaying lesser cats
- Establishment of display aviary
- Schemes for establishment of a children's zoo under the nature education programme
- Scheme for establishment of a farm for breeding and rearing dwindling species of Himalayan ungulates
- Construction of a small aquatic pool for amphibians

In 1984-1985, two Ussuri tigers (*Panthera tigris altaica*) were born. A male was born on 31 October 1983, and a female was born on 8 July 1982. A pair of Ussuri (Amur) tigers was received from Helsinki Zoo as a gift on 6 February 1985.

The research activities of the park led to the publication of the following papers:

- Longevity record by Ussuri Tiger (Panthera tigris altaica) in the Padmaja Naidu Himalayan Zoological Park, Darjeeling—Lahiri, R.K. & Datta Chaudhuri, K.C. Jour. Nat. Hist. Soc. 1(2) NS p. 131, 1982.
- Birth of cat bear or lesser panda (*Ailurus fulgens*) in the Padmaja Naidu Himalayan Zoological Park, Darjeeling—Lahiri, R.K. Jour. Nat. Hist. Soc. 1(2) NS pp. 128-130, 1982.
- "Nature trail' in the Padmaja Naidu Himalayan Zoological Park, Darjeeling—Lahiri, R.K. Jour. Nat. Hist. Soc. 1(2) NS pp. 125-127, 1982.
- Record of parasitic infestation in captive and semi-captive wildlife in the Padmaja Naidu Himalayan Zoological Park, Darjeeling—Datta Chaudhuri, K.C. & Gurung, D.S. Jour. Nat. Hist. Soc. 1(2) NS pp. 114-115, 1982.
- A case of renal osteo-dystrophy in *Panthera tigris altaica* in the Padmaja Naidu Himalayan Zoological Park, Darjeeling—Datta Chaudhuri, K.C. & Gurung, D.S., Bhattacharya H.M. and Biswas P.K. Jour. Nat. Hist. Soc. 1(2) NS pp. 94-96. 1983.

In 1985-1986, the Snow Leopard Breeding Centre started functioning with an initial pair received from Zurich Zoo, Switzerland, on loan. The chairperson of the International Snow Leopards Trust, accompanied by a team of experts, visited the zoo in October 1988. The trust cleared the loan of a second pair, being satisfied with the standards of management and upkeep of the first pair at PNHZ Park. In 1989-1990, a pair of Tibetan wolves was received from Shimla Zoo in exchange for a pair of tragopan

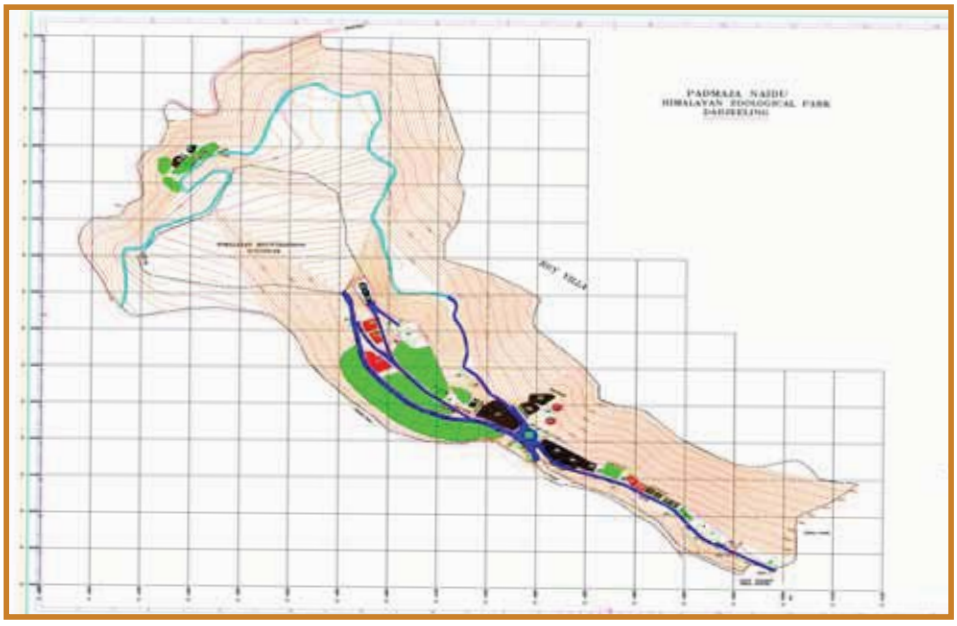


Photo credit: Alankar Jha

Layout Plan of Padmaja Naidu Himalayan Zoological Park

pheasants. There was success in breeding the rare tragopan pheasant and kalij pheasant. The development programme of the park included schemes for establishing centres for breeding snow leopards and the endangered Himalayan pheasant. The park authorities contemplated the development of further centres for captive breeding of endangered species of mammal and bird indigenous to the Himalayan region such as the red panda.

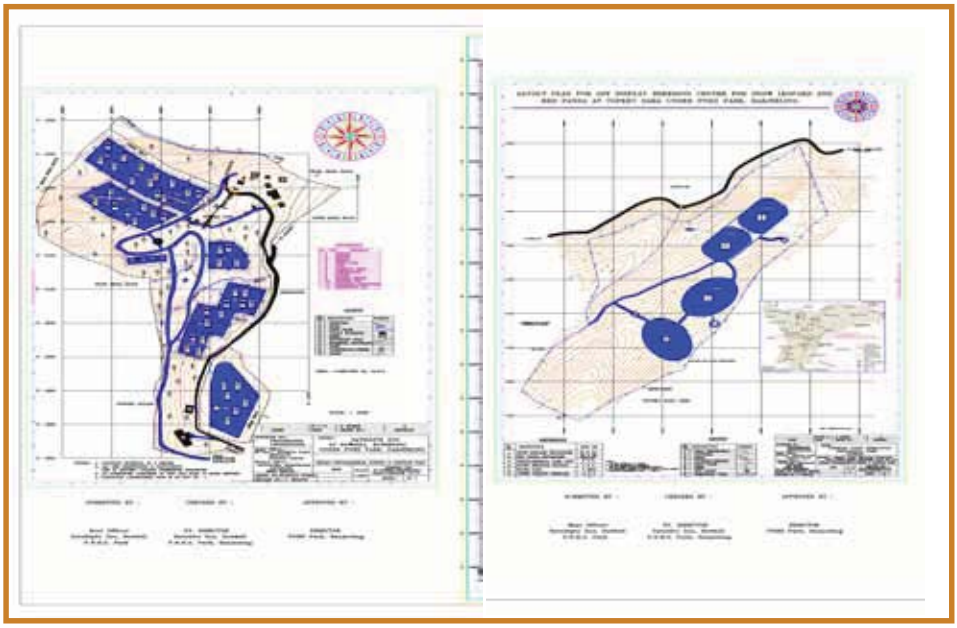
The park received a pair of Ussuri tigers from Whipsnade Zoological Park, of the London Zoological Society, on 26 February 1990. Two cubs were born. In 1993-1994, the zoo started a red panda captive breeding project in collaboration with Rotterdam Zoological and Botanical gardens, the Netherlands, with the intention of reintroducing the animal in the wild if needed. The birth of first red panda took place on 20 June 1994. An international red panda workshop was organized on 24 and 25 April 1995. The main objective of the workshop was to establish an international collaboration for systematic captive breeding. Activities conducted outside the zoo included carrying out measures to conserve the red panda in its natural habitat with financial assistance provided by the State Wildlife Wing under the Wildlife and Biodiversity Component of the West Bengal Forestry Project.

In 1996-1997 the park received a pair of Himalayan tahr from Helsinki Zoo and donated a pair of red pandas to Gangtok Zoo and Tibetan wolf (one pair) and Siberian tiger (one pair) to Nainital Zoo. The park conducted a training programme for the staff of Sikkim Zoo.

In 1998-1999 the park thought of rain water harvesting and built an underground water storage tank to be used during the lean season. With financial assistance from the state and central governments, equipment was bought for the veterinary facility, such as a Nikon phase contrast microscope, an endoscope with a TV monitor and camera fittings, a semi-automated clinical chemistry analyser with ELISA facility and a portable X-ray machine.

At its society meeting on 22 February 2002, the park agreed to restock the wild population of red pandas in Singallila National Park (NP) by introducing captive red pandas from the zoo. The State Wildlife Advisory Board cleared the project in its meeting on 1 March 2002. Hair follicles of the red pandas in the zoo were sent to the WII for DNA studies. The salamander pond was improved. The pond was dug, and boulders were placed at some places to make crevices similar to the ones used by salamanders in their natural habitat. The outer edges of the ponds were planted with more vegetation. A few water plants were also added to create a habitat similar to their natural habitat. In the herbivore section, a metre-wide space was introduced between adjacent enclosures and the space was lined on either side with nets to break the visual contact between the different species. The red pandas Mini and Sweety were sent to an intermediary release facility on 14 August 2003. The red pandas Neelam and Dolma sent to the intermediary release facility at Gairibas on 6 November 2004. The first release of zoo-bred red pandas took place on 14 August 2003, which happens to be the anniversary of the foundation of the zoo. The released animals were radio-collared so that they could be monitored after they were released. The Research Section coordinated the post-release monitoring. The section also coordinated the DNA-based studies (using blood samples) of the red pandas at the Centre for Cellular and Molecular Biology (CCMB), Hyderabad. DNA-based studies of Tibetan wolves were also conducted in collaboration with the CCMB. The Education Section prepared and printed zoo booklets and prepared new steel interpretative signage with assistance from CEE, Ahmedabad.

Animal births and exchanges took place frequently. A regional workshop was held on developing "Master Plan for Zoos" on 7 and 8 June 2007 for zoos and rescue centres of West Bengal. An area of 4.645 ha of Dowhill Deer Park was taken over from the Kurseong Division, under the Directorate of Forests, West Bengal, on 25 February 2009 for establishing an off-display breeding centre for herbivores and pheasants under PNHZ. The management plan for this is incorporated in that of PNHZ. The Park was granted membership by the World Association of Zoos and Aquariums (WAZA), Berne, on 14 September 2009. Coming under the umbrella of WAZA will support fulfilment of the park's mission and continuing to protect and conserve endangered species of the eastern Himalaya. The Padmaja Naidu



Layout Plan for Dow Hill - Breeding centre for Snow Leopard and Red Panda

Photo credit: Alankar Jha

Himalayan Park Society was dissolved itself at its final Governing Body Meeting, held on 3 November 2009, at Kolkata. The park is now registered under the Zoo Authority of West Bengal. The Bengal Natural History Museum, which was under Wildlife Division–I, was handed over to the Darjeeling Zoo on 7 January 2010. Construction of the Nature Interpretation Centre within the zoo premises began. The Nature Interpretation Centre will be upgraded and will serve the purpose of educating and entertaining visitors. The zoo received three pairs of Himalaya tahr and two pairs of blue sheep from Okinawa Kids Foundation, Okinawa, Japan, in exchange for a pair of Indian elephants. This was an international animal exchange taking place after more than 20 years. Another international exchange programme took place between Auckland Zoo, New Zealand, and PNHZ Park, in which one zoo-born male red panda was sent to Auckland Zoo, New Zealand, and one female red panda was brought to Darjeeling Zoo. Digitization of the items of the Bengal Natural History Museum as received by PNHZ Park on 7 January 2010 was carried out by photographing each item and providing information about these items, thus making it easier to preserve, access and share them in form of a book. Closed circuit televisions were installed at different locations of the park to maintain constant surveillance. They were also installed at the Conservation Breeding Centre to document the snow leopards. The trees at the peripheral areas/display areas of the park were labeled for the convenience of the visitors, students, researchers, etc. with name plates that provide the scientific name, local name and family. Contouring of the zoo and Dow-Hill area was carried out. Landforms and elevation, hydrography, transportation, vegetation boundaries, urban areas, buildings and a variety of other features were indicated. A 5 ha plot of land at Topkedara was handed over to PNHZ for construction of an off-display conservation breeding centre for snow leopards (*Uncia uncia*) and red pandas (*Ailurus fulgens fulgens*). PNHZ received 1:3 Temminck's tragopans (*Tragopan temminckii*) and 1:3 satyr tragopans (Tragopan satyra) on 2 August 2011 from Paradise Wildlife Park, United Kingdom. The master layout plan of the park and its two subsidiary breeding centres was approved by the CZA.

In 2012, a population census of Red panda (*Ailurus fulgens*) was conducted by PNHZ Park and the Wildlife Wing of the Forest Department, Government of West Bengal, in two phases in March and April, in both Singalila NP and Neora Valley NP. Scats were collected and sent to LaCONES for further analysis of the red panda population and the inter–relationships in the population. The floral composition of the red panda habitat was also studied. The park received one female snow leopard (*Uncia uncia*) aged 2 years and 6 months from Nurenberg Zoo, Germany, as part of an exchange programme on 11 October 2012. An endangered species recovery course was organized by Durrell Conservation Academy, United Kingdom, in collaboration with the CZA and the park.

Current activities of the park:

- Two research projects completed, two ongoing with grants from the CZA
- DNA profiling of all zoo animals meant for conservation breeding project with help from LaCONES
- Regular exchange programmes for updating the gene pool
- Well-defined education programme, extension programme and zoo outreach programme as well as zoo internships
- Branding of the zoo with local tea markets
- Adoption of animals
- Water conservation, rain water harvesting
- Underground sewerage so that foul smells have been eliminated
- Providing employment opportunities to villages under FPC/EDC by making soft toys
- Voluntary change of animal enclosure furniture by zoo keepers and other staff once every 45-60 days
- Publication of quarterly news bulletin of zoo and other publications and maintaining zoo's website

The author is the Director of Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal

Photo credit: MCBT

MADRAS CROCODILE BANK & SAN DIEGO ZOO : CONSERVING GHARIALS

– Colin Stevenson

The gharial (*Gavialis gangeticus*) is a Critically Endangered crocodilian, and its main remaining stronghold is within the National Chambal Sanctuary (NCS), which is administered by the Indian states of Madhya Pradesh, Uttar Pradesh and Rajasthan.

For a number of years, the Madras Crocodile Bank Trust has had a project that has allowed us to follow the movements of up to 20 gharials within the NCS. Because of this work, we have learnt much about the home ranges and seasonal movements of gharials. Our hope in carrying out this study some light would be shed on the cause of the die-off in 2007–2008 of more than 130 subadult gharials. Although the cause of the mortalities remains a mystery, we do have a lot of new information about the behaviour of gharials, including some incredible notes on their parental care.

In carrying out this study (which is ongoing), we have relied on the generous support of crocodile enthusiasts and, more importantly, international zoos. As is often the case, zoos have provided most of the funding for our project. A fact often overlooked is that the main support for conservation work comes from zoos – and we should be proud of this.

In May 2012, we continued our own support of the US zoos' breeding programme for gharials. San Diego Zoo is one of the largest and best-known zoos in the world. This zoo has supported our *in-situ* conservation work in the past, and we enjoy a good and cooperative relationship. After several years of preparation and paperwork, we finally sent 10 young gharials to San Diego Zoo. These gharials will strengthen the AZA's *ex-*

Gharials being tagged

Photo credit: MCBT

situ gharial breeding programme. The gharials were shipped in custom-made wooden crates, made to IATA standards here at Croc Bank. After the crates were built and fumigated, the gharials were made ready for shipping. We generally ensure that animals have not been fed for at least one week prior to shipping to avoid regurgitation or other stress-induced problems.

Once the CITES papers were received and all the other paperwork was in order, the flights were confirmed with Emirates Airlines. Once again, the MCBT staff members showed their experience as the young gharials were caught quickly and with minimum stress. With gharials, care is required to ensure that the fragile jaws are not damaged during capture, restraint and transport.

The passive integrated transponder (PIT) tags, which uniquely identify each animal, were carefully matched with the papers, and then the gharials were loaded into their crates, onto a truck, and then off to the airport at Chennai for the flights to California.

The gharials are now happily settled at San Diego Zoo and are vital additions to the American captive breeding programmes in zoos. When we send animals internationally, we always include the details that the receiving zoo may require to care for the animals – at least until they establish their own routine. San Diego Zoo reported that the gharials quickly responded to the feeding cues we use here at MCBT, and the diet and schedule we maintained for them were also followed.

This transfer took a long time to happen. It is an important transfer that has cemented the relationship between MCBT and San Diego Zoo and is now a direct link between *in-situ* and - conservation for one of India's most endangered species.

~

The author is the Director, Madras Crocodile Bank Trust, Centre for Herpetology

CZA NEWS

FINANCIAL ASSISTANCE TO ZOOS

Photo credit: Himanshu Malhotra

The Central Zoo Authority in its 64th Meeting of the Technical Committee of Central Zoo Authority granted financial assistance to the following zoos:

1. Assam State Zoo, Guwahati, Assam for construction of storm water drainage mechanism, enrichment of enclosures and squeeze cage for lions and tigers.

2. Sepahijala Zoological Park, Sepahijala, Tripura for chain link fencing around the Conservation Breeding Centre and Enrichment of animal enclosures of the Clouded leopard, Rhesus monkey, Pig tailed macaque & Binturong and construction of drinking water point.

3. Biological Park, Itanagar, Arunachal Pradesh for construction of separating wall between zoo and staff colony, construction of boundary wall at the periphery of Biological Park, Itanagar, purchase of CCTV night vision camera with CCD, digital video recording, CCTV monitoring with cost of cable, and providing solar electrification. Financial assistance was also given for medicines for zoo animals and Tranquilizing equipments

4. Thenzawl Deer Park, Aizawl, Mizoram for construction of treatment room kraals, feed store, drinking holes, night shelter, standoff barrier, fencing separating exhibit area, and boundary fencing.

5. Indira Gandhi Zoological Park, Visakhapatnam, Andhra Pradesh for enrichment of Enclosures of the Rhesus & Bonnet monkeys and Common langur, strengthening and raising of compound wall, construction of Reptile House, construction of Wild Dog Enclosure, sewage & Waste water disposal system and improvement to the Veterinary Hospital and various veterinary equipments.

6. Nehru Zoological Park, Hyderabad, Andhra Pradesh for Drinking Water Pipe line, construction of Delivery rooms and kraals for carnivores, interpretative sign boards, enrichment activities for the animal enclosures for Bear species), construction of feeding kraals in Herbivores enclosures, and strengthening of Zoo Security on the periphery by providing watch towers.

7. Sri Venkateswara Zoological Park, Tirupati, Andhra Pradesh for procurement of jet cleaner, preparation of Transport cages, squeeze cages, enrichment of animal enclosures, conservation education & interpretation signage, and installation of incinerator of 100 kg. capacity (Oil filled).

8. Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal for construction of Amphibian cum Reptile House, construction of store, protection wall and approach road at Conservation Breeding Centre

9. Kanan Pendari Zoo, Bilaspur, Chhattisgarh for construction of Veterinary hospital.

Photo credit: UCSZOO

CZECH & SLOVAK ZOOS: PIONEERING BEST PRACTICES IN CONSERVATION

– David Nejedlo & Petr Colas

The history of keeping and breeding wildlife in captivity in the territory that now covers two countries, the Czech Republic and the Slovak Republic, is long enough to boast a number of successful stories. Initiated back in the early 20th century with Liberec Zoo and Prague Zoo being the first milestones, the former becoming the first local zoological institution to open its gate to the public, whilst the latter pioneering the best practice in the country for long periods of time, the tradition has incorporated a number of facilities as time was passing by. Fruitful periods included, in particular, the 1940s and the 1950s, with more than 10 new zoos arriving on the scene the are of which covered a mere of 128.000 square kilometres. Strong links established between individual zoo directors and the mosaic of Czech and Slovak Zoos then turned into a higher level of zoo community, which took place in 1991, the outcome entitled the Union of Czech and Slovak Zoological Gardens. Since then, the organisation has evolved into a respected and robust body associating the majority of institutions of this kind operated under the zoo-licensing act.

The early 1990s presented a huge generation change, with new colleagues entering the line-up of those who had been well-known faces all around the country and abroad. Altogether, the directors formed a team that slowly began infiltrating the continent's strongest zoo organisation, EAZA, as well as that of the globe, WAZA. It was at that time when the Union was found useful for reaching supranational zoo structures by the newcomers enjoying the support of colleagues who had already entered. Czech and Slovak directors, curators, educators & marketers as well as researchers were assisting the development of international cooperation, whether it was through serving in the respective structures (EAZA's European Endangered Species Breeding Programmes - EEP, European Studbooks - ESB, Taxon Advisory Groups - TAG etc.) or participating in conservation campaigns and sharing lessons learned. Out of 19 full-member zoos, 14 institutions are now members of EAZA and 12 joined WAZA. Some colleagues are however active in other regional associations as well, such as EARAZA (9 zoos) and SEAZA (1 zoo). Furthermore, the majority deemed joining IZE as well as ISIS essential for fulfilling their mission.

Another turning point arrived in the late 1990s when the Union decided to make use of the huge potential and skills of the host of colleagues specialising in the respective fields. A scheme of working committees and groups was established and started to work. They now form a valued source of knowledge, skills and data and are the most precious tool that the Union has been employing in striving to work more and more efficiently, as well as a "base camp" to send out specialists assisting in numerous bodies of international organisations. Zoo directors and members of specialist committees have now been active in managing and/or scientific structures of WAZA, EAZA, IZE and IUCN's CBSG.

In addition to chairing one Taxon Advisory Group, coordinating two pan-European programmes (EEP) and keeping 15 European Studbooks, Czech and Slovak colleagues are personally involved in committees of 15 TAGs and 55 EEPs. Nine member zoos are also proud to participate in conservation projects branded by WAZA. Out of the global or continental schemes, many members (including those who are not WAZA/EAZA members) run their own projects, whether at an international or domestic basis, including activities to protect/preserve local wildlife.

EAZA or even WAZA conservation campaigns became another great chance to become involved for UCSZOO members, which they have been making use of since the beginning, from the Bushmeat Campaign, through Tiger or Amphibian Arc, up to the current scheme aiming at Southeast Asia. Each time this takes place at a highly coordinated level through teams of educators, teachers and marketers.

In addition to formal activities, the Czech and Slovak zoo community even has its "Wild Oscars" competition: called The Offspring of the Year, it awards, on an annual basis, animal keepers and managers for assisting the most intriguing and noteworthy creatures to be born and reared with success in both countries.

The collaboration between Sri Chamarajendra Zoological Gardens and the Zoo in Zlín, Czech Republic, has been on since 2009, when Zlín acquired a group of spot-billed pelicans (*Pelecanus philippensis*) as an exchange for several animals. The transfer was enormously appreciated by Zlín animal managers since in addition to these birds being very rare in European zoos, Zlín Zoo monitors the status of the species within the membership of the European Association of Zoos and Aquaria (EAZA).

From 2009 onwards efforts have continued with several more exchanges taking place. Discussions are now underway regarding another exchange, with Asian openbills and a pair of the sloth bear anticipated to depart for Zlín in future.

This hopefully is enough to give the very first picture of Czech and Slovak zoos and their contribution to captive breeding & conservation efforts worldwide for this magazine. Some may find it too general but outlining a zoo organisation with 21 years of fruitful and ever-flourishing cooperation would be a task too difficult to complete within a confined space. We will be happy to get back to the reader and offer particular stories of success in the issues to come. To learn more about events and new animals in 2011, please read our Annual Report, which is available at www.zoo.cz which has short summaries in English.

The authors are the President & Vice President of Union of Czech and Slovak Zoological Gardens

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Photo credit: Zlín Zoo

ACTIVITIES OF PRAGUE ZOO TO SAVE THE GHARIAL

Prague Zoo is one of the few zoos in the world exhibiting the Indian gharial (doing so since 2008 at its Chambal exhibit) and the only such institution belonging to the European Association of Zoos and Aquaria (EAZA). The stock at this zoo is one of the most viable captive breeding populations outside India. As such, it has special value in establishing a zoo-based backup population. These animals were obtained from Madras Crocodile Bank Trust and Centre for Herpetology, a crocodile rescue facility. The acquisition of the animals was possible thanks to the support of the Indian authorities. The transfer of the gharials is a recognition of Prague's active role in the global effort to bring this unique species back from the brink of extinction.

In line with the mission of modern zoos in biodiversity conservation and the World Zoo and Aquarium Conservation Strategy (WZACS) of WAZA, Prague Zoo's *ex-situ* gharial breeding programme has been linked from the very beginning to the *in-situ* rescue measures undertaken for the species in its native habitat. Preservation of the gharial in the wild is one of the zoo's priority projects, along with sending captive-bred Przewalski's horses to Mongolia and gorilla conservation in central Africa. Prague Zoo collaborates with the respective authorities, including the Czech embassies, for these projects. The activities relating to the gharial are being carried out in India mainly in partnership with Gharial Conservation Alliance (GCA).

In recent years, Prague Zoo has focused on addressing the gharial populations in the Chambal River and in Katarniaghat Wildlife Sanctuary, on the Girwa River. The zoo aims to prevent a mass die-off of gharials in these places and to provide equipment for gharial patrols and field stations. It also seeks to support the monitoring of existing habitats and populations using telemetry. The zoo donated equipment, including a motor boat, for carrying out conservation research. The equipment significantly helped improve surveillance of egg-laying sites. Previously, these had been subjected to illegal collection of eggs. As a result, dozens of young gharials now hatch even at locations where breeding has failed for many years.

Photo credit: Stanislav Pecháček

In addition to participating in the effort to monitor gharials on the Chambal River through telemetry and supporting field patrols, Prague Zoo plans to undertake other activities in India. These include (1) development (based on research) of a new strategic plan to ensure the survival of the gharial; (2) supporting, through GCA, an awareness-raising programme focused on the local communities in the gharial-range areas; (3) carrying out conservation research on other gharial populations (in the Son River, Hooghly River, Girwa River and Corbett National Park); and (4) providing additional equipment to field stations. Last, but not the least, the zoo would like to establish another gharial conservation project in Nepal in collaboration with international organizations.

CZA NEWS

CZA ISSUES SHOW CAUSE NOTICE

a. Cuttack Deer Park, Cuttack, Odisha has been issued Show Cause Notice for not adopting population control measures to reduce the number of animals.
b. Deer Park, Neelon, Ludhiana, Punjab for not complying with the conditions stipulated by the Central Zoo Authority.
c. Rescue Centre at Visakha Society for Protection and Care of Animals, Visakhapatnam to function as a "transit facility" and shift the animals to upcoming rescue centre at the Indira Gandhi Zoological Park, Visakhapatnam.
d. Rescue Centre for Circus animals at Bannerghatta Biological Park, Bangalore, Karnataka issued show cause notice for non compliance of conditions stipulated by the CZA.

CZA INITIATES DIGITIZATION OF RECORDS

The CZA had provided financial assistance to National Informatics Centre to digitize files of the Central Zoo Authority. The NIC will scan all the note sheets and files and prepare a master DVD which shall be available on the CZA MIS for easy functioning.

PROPOSALS FOR NEW ZOOS

1. **Zoo and Rescue Centre, Gorewada, Maharashtra** - The Technical Committee of the Central Zoo Authority recommended the proposal for the approval of the Chairperson, Central Zoo Authority for establishment of a Zoo and Rescue Centre at Gorewada, Maharashtra. Once approved by the Central zoo Authority, the State Government, Maharashtra will require to obtain necessary order from the Hon'ble Spreme Court of India.

2. **Zoological Park at Udhayagiri Fort in Kalkulam Village at Kanyakumari District, Tamil Nadu** - The Technical Committee after discussion in detail about the proposed site for establishment of a Zoological Park at Udhayagiri Fort in Kalkulam Village at Kanyakumari District, Tamil Nadu, decided that it should be evaluated by the members of the Expert Group on Zoo Designing of CZA namely; Sh. S. C. Sharma and Dr. Brij Kishor Gupta. The evaluating team members should also evaluate the existing zoos at Udhagamandalam, Trichy .

Photo credit: Himanshu Malhotra

FINANCIAL ASSISTANCE FOR CONSERVATION BREEDING CENTRES

1. Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal for intake and disposal water tank at Pheasant Breeding Centre, Dowhill and Enrichment inside the Seven Unit Pheasantry by planting vegetation, placing tree logs, making wooden structure night shelter etc.
2. Nehru Zoological Park, Hyderabad, Andhra Pradesh - for expansion of Mouse deer conservation breeding facility.
3. Conservation Breeding Centre for the Blyth's tragopan, Kohima for CCTV and equipment
4. Biological Park, Itanagar - for Conservation Breeding Centre for the Hoolock gibbon for enrichment of enclosure

APPROVAL OF MASTER (LAYOUT) PLANS AND MASTER PLANS

The following Master (layout) Plans were approved by the CZA in its 64th and 65th meeting of the Technical Committee.

1. Sri Chamarajendra Zoological Gardens, Mysore, Karnataka
2. Thiruvananthapuram Zoo, Thiruvananthapuram, Kerala
3. Madras Crocodile Bank Trust, Mamallapuram, Tamil Nadu
4. Zoo and Rescue Centre, Mukundpur, Satna, Madhya Pradesh
5. Indira Gandhi Zoological Park, Visakhapatnam, Andhra Pradesh
6. State Zoo, Umtrew, Meghalaya
7. Sri A. N. Jha Deer Park, Hauz Khas, New Delhi.
8. Rajkot Municipal Zoo, Rajkot (revised)

The following Master Plans were approved by the CZA in its 64th and 65th meeting of the Technical Committee.

1. Rescue Centre at Gorewada, Maharashtra
2. Lion Safari, Etawah, Uttar Pradesh
3. Zoological Park at Puthur (Relocation of State Museum and Zoo, Thrissur), Kerala
4. Sri Chamarajendra Zoological Gardens, Mysore, Karnataka
5. Manipur Zoological Garden, Manipur.
6. Zoo and Rescue Centre at Mukundpur, Satna, Madhya Pradesh

CZA EXTENDS RECOGNITION TO ZOOS , RESCUE CENTRES AND CIRCUSES

Extension of recognition was granted by the CZA in its 64th and 65th Meeting of the Technical Committee to the following Zoos, Rescue Centres and Circuses.

1. Karuna Wildlife Rescue Centre, Rayalaseema, Andhra Pradesh
2. Lion Safari, Vasona, Dadra & Nagar Haveli
3. Mini Zoo at Gendekatte, Hassan, Karnataka
4. Kuanria Deer Park, Nayagarh, Odisha
5. Gharial Research and Conservation Unit, Tikarpada, Odisha
6. Himalayan Zoological Park, Bulbuley, Gangtok, Sikkim
7. Kunjanagar Eco Park, Kunjanagar, Coochbehar, West Bengal
8. Kumari Kangsabatti Deer Park, Bankura, West Bengal
9. Adina Deer Park, Malda, West Bengal
10. Jhargram Deer Park, Jhargram, West Bengal
11. Ludhiana Zoo, Ludhiana, Punjab
12. Biological Park, Itanagar, Arunachal Pradesh
13. Sundervan Nature Discovery Centre, Jodhpur Tekra, Ahmedabad, Gujarat
14. Birsa Mrig Vihar, Kalamati, Ranchi, Jharkhand
15. Children Park-cum-Mini Zoo, Binkadakatti, Gadag, Karnataka
16. Malampuzha Snake Rescue & Rehabilitation Centre, Kerala
17. Aurangabad Municipal Zoo, Aurangabad, Maharashtra
18. M. C. Zoological Park, Chhatbir, Chandigarh, Punjab
19. Nawabganj Deer Park, Unnao, Uttar Pradesh
20. Rasikbeel Mini Zoo, Rasikbeel, West Bengal
21. Aizawl Zoo, Aizawl, Mizoram
22. Sanjay Gandhi National Park-Zoo, Borivali, Mumbai
23. Leopard Rescue Centre, Manikdoh, Maharashtra
24. Deer Park, Satyam Technology, Bahadurpally Village, Ranga Reddy District, Andhra Pradesh
25. Deer Park, Jawahar Lake Tourist Complex, Samirpet, Hyderabad, Andhra Pradesh
26. Sangai Deer Park, Sanghi Nagar, Hyderabad, Andhra Pradesh
27. Himayat Sagar Mini Zoo, Himayatsagar, R. R. District, Hyderabad, Andhra Pradesh
28. Patiala Zoo, Patiala, Punjab
29. Rambo Circus
30. Empire Circus
31. Gemini Circus
32. Great Royal Circus
33. Great Bombay Circus
34. Jamuna Circus
35. Kohinoor Circus

CENTRAL ZOO AUTHORITY ISSUES GUIDELINES TO CIRCUSES

Guidelines for housing of Elephant in Circuses:

1. The Circus Operator should ensure minimum area of 48 sq mts with the provision of shade of 5.5 mts high as feeding cum retiring area for each elephant.
2. The ground provided for housing elephants should be kuccha made of mud.
3. The elephants should be kept tied only in one leg with chain/ rope covered by leather tubes, the legs for tying may be changed alternately.
4. Only when any elephant excited, irritated or creating any problem or in musth, the elephants (male/ female) should be more securely tied (may be tied on more than one leg) or other restraining measures can be taken.
5. Daily walk/ exercise for atleast two hours in the early morning hours should be given to all the elephants.
6. Tree fodder like peepal (*Ficus religiosa*), jamun (*Schizigium cumini*) and neem (*Azardiractha indica*) should be provided along with the branches.
7. Treatment records should be kept as per the proforma provided by the Central Zoo Authority.
8. Faecal samples of the animals should be examined periodically in the laboratory.
9. Screening against infectious and contagious diseases should be made regularly.
10. Birth, death and acquisition report should be intimated to the Central Zoo Authority within 24hrs followed by the annual report at the end of each financial year.
11. The circus must procure a set of tranquilizing equipment with essential drugs for meeting the emergencies particularly when they have a young bull elephant which is coming to musth.
12. The elephants housed in the circuses should have a microchip implanted, the details should be submitted to the Central Zoo Authority.
13. All the elephants housed in the circuses should have a ownership certificate.

Guidelines for housing of Hippos in circuses

1. The circus operators should provide minimum of 400 sq. meter area for housing of Hippopotamus.
2. A water body of 40 sq. meter with 1.5 meter depth and suitable slope should also be provided for each Hippo.

Guidelines for housing of Macaws & other birds in Circuses

1. A collapsible housing cage of the size of 3 meter (wide) x 3 meter (length) x 3 meter (height) should be provided for each pair of Macaws housed at circuses apart from the transportation cage.
2. The cage should have provision of appropriate furnishing (tree branches), enrichment artefacts, sand and water.

TRAINING PROGRAMMES OF CZA

1. CZA has approved two week training for Conducting Specialized theme based training programmes for zoo keepers on regional basis “Management of wild animals in captivity with special reference to Improved Animal Health and their Upkeep”. These will be organized at Guwahati, Ahmedabad, Mysore, Chhatbir, Nainital and Bhubaneswar in collaboration with Assam State Zoo, Guwahati; Kamla Nehru Zoological Park, Ahmedabad; Sri Chamarajendra Zoological Gardens, Mysore; M. C. Zoological Park, Chhatbir; Pt. G. B. Pant High Altitude Zoo, Nainital and Nandankanan Zoological Park, Bhubaneswar.

2. One Week Training Programme on Conservation Breeding :-
   The CZA approved a proposal for organizing one week training programme on conservation breeding by Wildlife Institute of India, Dehradun/ LaCONES in collaboration with Nandankanan Zoological Park, Bhubaneswar and Nehru Zoological Park, Hyderabad at LaCONES.

3. Zoo Biologists Workshop at Jaipur from 25-28th June 2013 with the theme “Zoos as a Tool for Scientific Management of Animals wth focus on Research and Publications”.

Photo credit: Himanshu Malhotra

Photo credit: Himanshu Malhotra

CZA APPROVES THE EXCHANGE OF ANIMALS BETWEEN INDIAN ZOOS

1. The 64th Technical Committee of CZA approved the following exchange of animals.

2. Sepahijala Zoological Park, Agartala, Tripura will give a pair of Clouded leopard and one Binturong to Aizawl, Mizoram, in exchange for one Clouded leopard, one Binturong and one Hoolock gibbon.

3. Lucknow Zoological Gardens, Lucknow will give five Swamp deer to Jaldapara National Park, West Bengal.

4. National Zoological Park, Delhi will give four Brow antler deer, five Hog deer, ten Red jungle fowl and four Emu to Kanan Pendari Zoo, Bilaspur in exchange for two Four horned antelope, two Hyena, two Jungle cat, four Screech owl and five Grey partridges.

5. M. C. Zoological Park, Chhatbir will give four Chinkara, five Spot billed duck and seven Painted stork.

6. National Zoological Park, Delhi will give one Asiatic lion (on breeding loan) and ten Red Jungle fowl.

7. Sir Peter Scott Nature Park, Jamnagar will give eight Black buck to Assam State Zoo, Guwahati.

CZA APPROVES THE EXCHANGE OF ANIMALS BETWEEN INDIAN AND FOREIGN ZOOS

1. Zoo Vienna, Vienna will give one Northern river terrapin (*Batagur baska*) and one Staurotypus triporcatus to Madras Crocodile Bank Trust, Chennai in exchange for six Red crowned roof turtle (*Batagur kachuga*).

2. The Tisch Family Zoological Gardens, Israel will give two Chimpanzee (*Pantroglodytes*), six Ringtailed lemur (*Lemur catta*), four Mandrill (*Mandrillas sphinx*), and four Geoffroy's Mamoset (*Callithrix geoffroyt*) to Indira Gandhi Zoological Park, Vishkapatnam.

3. Jhiava Zoo, Czech Republic will give one Snow leopard to Padmaja Naidu Himalayan Zoological Park, Darjeeling.

4. National Zoological Gardens, Colombo, Sri Lanka will give four Fishing cat and two Pigmy Hippopotamus to Indira Gandhi Zoological Park, Visakhapatnam in exchange for ten Blackbuck, and four Emus.

5. Dehiwala Zoo, Sri Lanka will give seven Anacondas (*Eunectes murinus*) to Thiruvananthapuram Zoo, Thiruvananthapuram.

6. Lodz Zoo, Poland will give two Snow leopards to Padmaja Naidu Himalayan Zoological Park, Darjeeling.

CZA WITHOLDS RECOGNITION TO JUMBO CIRCUS AND BIKANER ZOO

The Jumbo circus operator has been asked to submit an undertaking on shifting of all elephants to one unit. The grant of renewal of recognittion is kept witheld till reciept of clarification.

The Committee decided to withhold the grant of recognition to the Bikaner Zoo, Bikaner for the period of one year. However during this period the Bikaner Zoo should develop the Master Plan for the new site and get the same approved by the Central Zoo Authority.

जहाँ है हरियाली।
वहाँ है खुशहाली।

Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण

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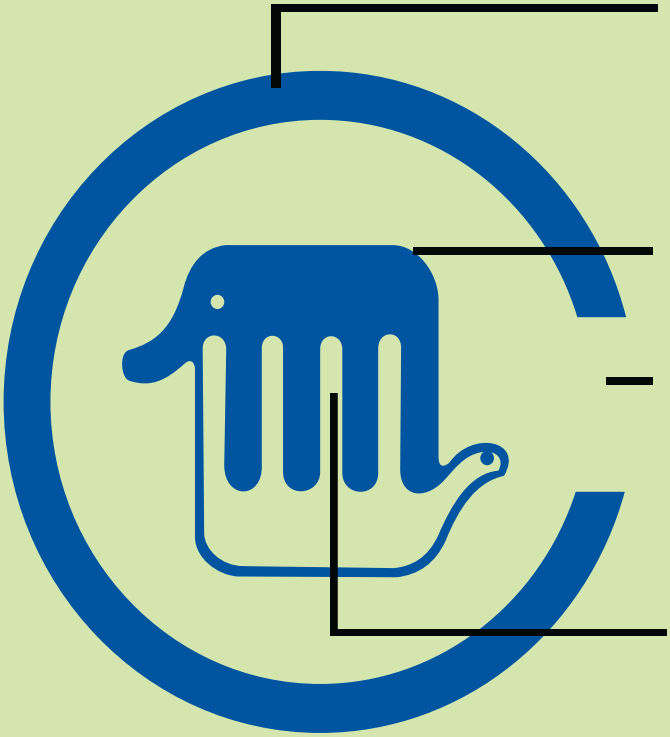

'C' stands for the first letter of the Central Zoo Authority and as well as "Conservation"

The blue hand looks like a mammal and the white hand looks like a bird

The openness of the form is suggestive of getting away from the traditional bar like enclosures to "open and naturalistic exhibits"

Interlocking hands depicts "cooperation and interdependence"

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