

## Tiger Mountain : an exhibit at the famous Bronx Zoo

The Wildlife Conservation Society works in ten countries to save tigers. These *in situ* efforts as well as enrichment for tigers in captivity are the themes of interpretation at "Tiger Mountain" - an exhibit for Amur tigers at the Bronx Zoo in New York:

### Description

Tiger Mountain presents a unique opportunity to increase guest awareness of WCS' singular combination of *in situ* and *ex situ* work with tigers, and to inspire lasting personal connections to big cats and continued interest in their survival. To achieve these goals, WCS applied its four guiding exhibit criteria: An exhibit must be good for animals, guests, zoos, and conservation. Formative evaluations revealed that guests expect to see these magnificent striped creatures during a zoo visit. Tiger Mountain offers year round, memorable, up close encounters with tigers, a safe whisker away from the big cats' spacious, naturalistic enclosures, where a variety of enrichment activities are offered daily to exercise mind and body. Enrichment initiatives stimulate tigers, captivate guests, and are also shared with the larger zoo community. In addition, future zoo exhibits can benefit from the innovative multimedia technology used in an out-of-door setting. Through these multimedia experiences, that include film, digital media, and interactive graphics, guests learn about WCS' unique efforts to save tigers in ten countries around the globe.



**Studio, Melbourne, Australia; Film Design and Video Graphics: Archipelago, New York; Film Design and Video Graphics: Wildlife Conservation Society, New York**

### Plants:

Plantings evoke the densely forested Amur valley. The plant list specifies the Latin names of the plants used for this exhibit.



### Size

Two outdoor enclosures are about 3000 m<sup>2</sup> each. Visitors enjoy views through 2.4 by 14 m (45 linear feet and 8-foot high) glass panels into each enclosure. Off-exhibit indoor (5x6 meter or 17x20ft) and outdoor enclosures (either 12x12 or 12x18 meter resp. 40x40 or 40x60 ft) include spaces appropriate for introducing tigers, breeding, and rearing cubs.

**Cost** US-\$ 8,400,000 including 8.3 % for design. **Opening date** 15 May 2003

### Exhibit Design:

Exhibits and Graphic Arts Department, Wildlife Conservation Society, New York Architect: Cetra/Ruddy Incorporated, New York

**Construction Management: Humphreys and Harding, New York; Film Design and Video Graphics: Magian Design**



**Tiger Mountain was designed to be spacious enough to accommodate appropriate social groupings of tigers. The Bronx Zoo is fortunate to have two pairs of females that share space together well, including the talkative Alexis and her mother Norma.**

### Features dedicated to animals :

Many enrichment items are integrated into the habitats: cool rocks for summer; hot rocks for winter; a tiger-activated rock that sprays a fine mist; a 40,000 liter (10,000 gallon) watering hole stocked with live carp and movable log float; and pull-toys. As for tiger safety, all enrichment items are tested for durability before being offered to the big cats. Enclosures have an "introductory door" for initial limited visual and olfactory contact between potential mates.

<http://www.zoolex.org/zoolex/cgi/view.py?id=817>

Maternity dens, equipped with CCTV (so keepers can monitor pregnancy, parturition, and maternal care), feature double shift doors to muffle sounds.



**Guests develop new understanding of and respect for tiger power when they test their strength with a pull toy identical to one the big cats' use for exercise. A kids' group effort barely budes the ball attached to the 300pound-resistant spring, which a tiger can pull effortlessly.**

#### **Features dedicated to keepers**

Holding facilities were designed to allow keepers optimum views of tigers. The eco-friendly building favors natural over artificial lighting and has eight spacious indoor tiger enclosures, a keeper office, kitchen food prep area, and locker rooms for men and women. A woven 3 mm (1/8") stainless steel mesh training wall protects keepers, who only provide food rewards to tigers on ends of feed sticks. Exhibit night lighting allows for evening events and a way for keepers and guests to always see cats. The well-lit holding building is equipped with three mesh secondary doors allowing keepers to inspect corridors before entering animal areas. Shift doors are clearly labeled and have secondary locks.

Keepers have rooftop access to pavilions, offering a way to monitor cats' behaviors, to inspect tiger exhibit areas, and to distribute enrichment items throughout the day.

#### **Features dedicated to Visitors:**

Wheelchair guests find pathways accessible in width and slope and easy to maneuver due to fibar surfacing (trademark of a special surface product). All digital touch screens are wheelchair accessible. Tigers are 20 cm (8 in) above guest area ground level to make viewing easier for guests in wheelchairs.

While our guests have never been so close to tigers they have also never been so safe thanks to completely enclosed viewing areas. Prior to the training wall coming down, the immediate area is cordoned off, placing guests 3 m (10 ft) back from keepers. The building has fire sprinklers.

#### **Interpretation**

Tiger Mountain's messages are conveyed through a unique combination of live programs, digital media,

interactives and graphics. Daily enrichment / training sessions fuel the guests' passion for tigers while enlightening them about ongoing efforts by zoos to enrich animal lives, providing unprecedented insights to work typically done behind the scenes. Keepers function as interpreters, interacting with guests, explaining enrichment's role as an integrated part of animal management, and answering guests' questions. Seeing tigers and keepers interact, listening to training commands and tiger chuffs and growls provides an unforgettable guest experience.



**Two enclosures, each 3000 m<sup>2</sup> (3/4 of an acre), dense with trees similar to those found in the forested Amur Valley, provide tigers ample space to amble. Guests enjoy spectacular year round tiger viewing, especially in winter, through 14 meter (45 linear feet) of 2.4 meter high glass.**

Guests can learn more about tiger enrichment by using digital media touch screens, available in each pavilion, that foster independent learning and exploration. A nonlinear interface allows guests to access information based on individual interests and learning styles. Photos, text, and short video clips reinforce basic enrichment tenets. Similar digital technology, placed further along the interpretive trail, encourages visitors to discover threats tigers face, while still other touch screens bring to life WCS' global tiger conservation efforts. A fourth digital media area, located at the exhibit's exit, allows visitors to electronically sign up to stay connected to WCS and tigers.

WCS received a grant to develop the digital media experience, which required innovative screens readable in bright outdoor light, and which resulted in development of an extensive text and visuals database. Interactives were developed to address multiple learning styles. In the pavilions, guests can sample scents tigers find attractive, see how big tigers are in relation to themselves, test their strength with the same type of pull toy the tigers use, and more. Further along the interpretive trail, guests can climb aboard and explore a poacher's truck packed with crates illustrating the dangers to tigers or through the use of a touch screen, navigate their way through these same threats to tigers. A field researchers' tent plays continuous, tiger advocacy, ad-like footage, and a conservation strategies wall with lift-flaps, spinners, audio, and more showcases WCS' strategies to protect tigers.

## Management

Tigers are invited up to the training wall for enrichment/training sessions three or four times daily, which allows keepers to inspect them and assess their general health. Sessions also reinforce bonds between keepers and cats. Enrichment items are placed in exhibits daily, and may include boomer balls, deadfall for clawing, deer hides (purchased from a local venison farm), hidden food treats, and scents.



**Interactives and graphics were developed to address multiple learning styles. For example, in each pavilion, guests try to figure out which tigers are on exhibit by looking for telltale stripes. Lift flaps reveal answers, programmed daily by keepers from their office in the holding area.**

## Research

Graphics were designed based on Smithsonian Institutions standards for readability and Pennsylvania and Texas Department of Transportation studies' conclusions that light/white letters on a dark background create the most readable signs. Among NGOs, WCS leads the way in tiger research and conservation, actively working in ten countries to save tigers.

## Conservation

Tiger Mountain highlights WCS' unparalleled in situ and ex situ work with tigers, bringing far flung ongoing efforts as close as guests' fingertips with digital media and interactives. Stories, photos, and videos of WCS field researchers and zoo staff personalize the experience. A workshop / training program for field conservation educators from India, on curriculum and public exhibits, was hosted at Tiger Mountain, which has also already proven an effective vehicle for generating significant donor contributions, with one \$10 million donation being allocated across WCS' tiger projects: international (\$4 million), Bronx Zoo Tiger Mountain endowment (\$4 million), and education (\$2 million).

WCS participates in the Tiger SSP. The holding facility was designed to enhance captive propagation.

Guests can participate in WCS' conservation efforts: those that enter their e-mail address receive more information at home and can choose to "adopt" a tiger from one of four locations where WCS is at work. Zeff, a Bronx Zoo-based female, has currently generated the most dollars.

Tiger Mountain itself was constructed with conservation of resources in mind, beginning with its location in an area relatively dense with large deciduous trees similar to those found in Amur tigers' natural habitat. As a result, fewer than 12 trees were removed during construction and all of those were due to pre-existing damage and disease.

Holding is tiger and energy-friendly, favoring natural over artificial light, fresh air circulating in summer as opposed to air conditioning, and heated floors set to an Amur tiger-appropriate 55° in winter.

## Local resources

Reclaimed wood from a demolished railroad trestle bridge in Oregon was used in the exhibit pavilions, preserved with an eco-friendly, non-arsenic treatment.

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### Zoo Design Workshop

A workshop focussing on informal learning at the animal exhibit will be held in German language at Naturschutz-Tierpark Görlitz in Germany on Thursday, March 22 and Friday, March 23, 2007. ZooLex Workshops are practice-oriented and based on case studies. Information and registration: <http://www.zoolex.org/workshop.html>

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