



# ADVANCING BEAR CARE WORKSHOP INDIA 2018



Bear Care  
GROUP



WILDLIFE SOS  
INDIA



GENX - 1500 HOTELS

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# WORKSHOP PROGRAM



## WELCOME

Dear Bear Care Delegates,

The Bear Care Group and Wildlife SOS are delighted to welcome you to the Advancing Bear Care 2018 Workshop, in Agra, India. We have partnered to organize this exciting event to gather delegates to Agra from India and around the world to share information on the principles of behaviour-based bear husbandry, environmental enrichment, operant conditioning, veterinary care, and bear conservation. Delegates will participate in lectures and break out workshops wherein real life bear care problems will be presented and solutions discussed. Delegates will also attend enrichment and training practicums at the Agra Bear Rescue Centre. Please enjoy these next few days, meet old friends, make new friends, share information, discuss, debate, and problem solve, all this to improve the lives of the captive bears in our care.

Jay Pratte  
President  
Bear Care Group

Geeta Seshamani  
Co-founder & Secretary  
Wildlife SOS

Kartick Satyanarayan  
Co-founder & CEO  
Wildlife SOS



## BEAR CARE GROUP MISSION STATEMENT

The Bear Care Group creates and enhances communication, cooperation and education among international bear care professionals by organizing bear care programs, publications and resources focused on advancing and sharing information on bear behaviour, husbandry, enrichment, training, veterinary care and other topics to further global bear welfare and conservation efforts.

Check out [www.bearcaregroup.org](http://www.bearcaregroup.org) for post workshop wrap up and photos. Continue networking with colleagues at [bearcare@yahogroups.ca](mailto:bearcare@yahogroups.ca). Find us on Facebook at [www.facebook.com/groups/16630879979](http://www.facebook.com/groups/16630879979) and on Twitter at [twitter.com/bearcaregroup](http://twitter.com/bearcaregroup).

Support the Bear Care Group by using GoodSearch at [goodsearch.org](http://goodsearch.org) for all of your internet searches and Amazon Smile at [smile.amazon.com](http://smile.amazon.com) for your shopping needs!

# WORKSHOP PROGRAM



## BOARD OF DIRECTORS

Jason Pratte - President

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Dr. Mindy Babitz - Vice President, Treasurer

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Lydia Lefebvre - Secretary

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Dr. Heather Bacon - Director

Angelika Langen - Director

Angela Gibson - Director

Annemarie Weegenaar - Director

Gail Hedberg - Advisor



## WILDLIFE SOS INDIA

Wildlife SOS was established in 1995 by a small group of individuals inspired to start a movement and make lasting change to protect and conserve India's natural heritage, forest and wildlife wealth. Kartick Satyanarayan and Geeta Seshamani dedicated themselves to the mission of eradicating the abusive practice of 'dancing' bears in India completely. Today it is an organisation responsible for taking action against animal cruelty, rescuing wildlife in distress, and working to resolve man-animal conflicts while promoting and educating the public about the need for habitat protection. Wildlife SOS is committed to working with communities who depend on wildlife for sustenance and providing them alternative and sustainable livelihoods as that is the key to sustainable conservation. Wildlife SOS also emphasizes the value of ex-situ research in veterinary areas, behavioural studies, reproductive physiology and other fields in collaboration with national and international universities and organisations.

Although Wildlife SOS is mainly known for its work with the "Dancing Bears" of India, they also have active projects to help Leopards, Elephants, Reptiles and other animals.

## AGRA BEAR RESCUE FACILITY

The Agra Bear Rescue Facility (ABRF) is one of the largest Sloth Bear Rescue Facilities in the world. It was established in 1999 by Wildlife SOS in collaboration with the Uttar Pradesh Forest Department. It is located in the Soor Sarovar Bird Sanctuary and is 25km from the iconic Taj Mahal. It currently houses close to 200 sloth bears in large forested enclosures with ponds and shady trees.

In Agra, each rescued bear undergoes a 90-day quarantine period during which a complete health check is given and the bear is treated for any disease, wounds, or parasites, and is vaccinated. After the quarantine period, the bears have access to large socialization enclosures where the behaviour & personality of each bear is closely monitored by the Wildlife SOS vets & staff. Afterwards the bear is matched with a social group and moved to a larger, free-range area based on each bear's personality. The bear hospital has an operation theater and laboratory, and is equipped with x-ray, ultrasound, dental machine and other equipment needed to meet any bear care need that may arise.

## ACKNOWLEDGEMENTS

The Bear Care Group wishes to thank all of the wonderful volunteers and sponsors whose enthusiastic support has resulted in ABC 2018 India. We are grateful to our guest speakers Kartick Satyanarayan, Dr. Brij Kishor Gupta, and Dr. Dave Garshelis. We wish to thank our poster presenters and moderators for sharing their expertise and experience. Thank you to all of the participants, those who have travelled from far and wide to join us, and those who live in India. And finally, we especially wish to thank our partners; Kartick Satyanarayan, Geeta Seshamani, Shirina Sawhney (planning), Sarah Sarkar (workshop logo) and the rest of the incredible Wildlife SOS staff for making this workshop possible.

We want to give special recognition to our wonderful sponsors for their tremendous support of our work at the Bear Care Group. Please take a moment to look at the back cover of this ABC 2018 Program and Proceedings for a colorful mosaic of their logos. And a grateful thanks to the sponsor who donated the beautiful workshop t-shirts.

Polar Bears International  
Winton Foundation for the Welfare of Bears  
AZA Bear TAG  
Hauser Bears  
WAZA  
UCLA Clothing  
GenX Agra





## ELSE POULSEN MEMORIAL GRANT

In 2016 Hauser Bears, longtime partner of the Bear Care Group, developed the Else Poulsen Memorial Grant. This grant is intended to provide a deserving candidate with the opportunity to attend an Advancing Bear Care conference or workshop which may have otherwise been financially unreachable. This grant will apply to all future Bear Care Group events, and the guidelines for the application process, as well as the parameters candidates must meet for consideration, will be announced and published online prior to BCG professional development opportunities. The Bear Care Group is thankful to Hauser Bears for their commitment to supporting our mission, goals, conferences and workshops over the past several years, and we look forward to all future collaborations.

For the ABC 2018 Workshop in India, working with our partners at Wildlife SOS, we realized that we were struggling to meet the specific goal of increasing regional attendance. After discussion between the Bear Care Group, Wildlife SOS, and Hauser Bears, we decided to apply the Memorial Grant towards encouraging and supporting the attendance of bear caregivers within India. Hauser Bears was gracious enough to widen the scope of the grant to aid us in providing registration, transport, and assist with lodging and food for several regional delegates. This aids the BCG in attaining one of our primary mission goals of providing resources for improved bear care where it will prove highly beneficial, and improve the skills of local caregivers while improving the welfare of many more bears. We are thankful to Hauser Bears for the Memorial Grant, and their aid with these delegates.

# WORKSHOP PROGRAM



The Else Poulsen Memorial Grant was developed in memory of the Bear Care Group's original founder and president, Else Poulsen. Her lifelong work, books, and dedication made her a hero to bears and caregivers alike, and this grant allows the Bear Care Group and its partners to continue her legacy.



## GENX AGRA HOTEL WORKSHOP LOCATION

The three day workshop will be held at the GenX Agra hotel.

NH19, Sikandra, Bainpur Mustkil, Uttar Pradesh

282007 India

Phone: +91 0124 4497024

Workshop lectures will take place in the conference hall. The three workshop sessions on day 2 and 3, will be held in the same hall.

The poster presentation area is in the same room as the workshop so will be open for the duration of the workshop. Authors will be available to answer questions at times specified in the agenda.

Lunch will take place in the GenX Hotel restaurant. The farewell dinner will be on the GenX Hotel Lawn.

## TRANSPORT

Transportation is coordinated from Delhi (airport or the city centre) for delegates leaving to Agra on the 1st and the 2nd of December.

Delegates making their own way between Delhi and Agra outside the above coordinated times can contact Shirina Sawhney for suggestions/assistance.

Local delegates staying at the WSOS volunteer house will be transported to the GenX Agra Hotel and back on December 3-5. Departure times will be confirmed closer to the date.

Delegates choosing other lodging options will be responsible for their own transportation from the airport and between their hotel and the GenX Agra Hotel.

On December 6 transportation between the GenX Agra Hotel and the Agra Bear Rescue Facility will be coordinated. Departure time will be confirmed during the workshop.

Delegates not participating in the post-workshop trips will be transported from Agra to Delhi on the evening of December 6 or morning of December 7.

On the 5th of December, a morning visit to the Taj Mahal will be arranged to watch the sunrise. The Taj Mahal is a well known icon of India and widely considered the most beautiful building in the world. Please note that the entrance fee to the Taj Mahal is not included in the registration fee and must be paid separately (INR1100 for foreign tourist, approx. US\$15 and INR 50 for Indian visitors).

## NAME BADGES

All delegates will be provided with a name badge upon registration. Please wear it; it is your pass to all sessions, functions and transportation. This will also help to introduce you to other delegates.

## POSTER PRESENTERS

All poster presenters are asked to bring their posters to the Registration Area on the morning of Monday, December 3rd where you will be directed to the poster presentation area in the conference room. You will receive set up assistance. If you are not available to speak with delegates at the times designated in the agenda please place a notification on your poster as to when you will be available.

## POSTER SESSIONS

Posters will be available for viewing in the main conference room throughout the workshop. Poster presenters will be available to answer questions during the breaks specified in the agenda.

## PRACTICUMS AT WILDLIFE SOS AGRA BEAR RESCUE FACILITY

On Thursday, December 6, 2018 delegates will travel by bus to Wildlife SOS's Agra Bear Rescue Facility (ABRF). The day will start with a tour of the facility, followed by workshops on enrichment and operant conditioning. Later during the day discussions will take place regarding behavioural issues and operant conditioning, and there will be time for a Q&A.

# AGENDA



Day 1: Monday, December 3		
Session 1 Compassionate conservation: The role of bears in captivity and wild bear conservation		
8.00-10.00	Registration	
10.00-10.30	Inaugural Session	
10.30-11.00	Coffee and tea break	
11.00-11.40	Keynote - Protection and welfare of bears in India	Kartick Satyanarayan
11.45-12.30	Status of wild sloth bear and how the captive community can support field conservation	Dr. Dave Garshelis, Thomas Sharp, Dr. Nishith Dharaiya IUCN
12.30-13.20	Lunch	
13.20-14.00	The bear necessities	Jay Pratte
14.00-14.45	Animal sentience and the role of the modern zoo in welfare and conservation	Dr. Heather Bacon
14.45-15:30	Sloth bear – human conflicts	Thomas Sharp, 5 mins Q&A
15.30-15.50	Coffee and tea break with poster viewing	
15.50-16.35	Ex situ conservation- an effective method and support towards in situ conservation	Dr. Arun (20 mins), Baiju Raj (20mins), 5 mins combined Q&A
16.35-17.20	Neonatal care of sloth bear cubs	Dr. Arun (20 mins), Baiju (20 mins), 5 mins combined Q&A
17.20-18.00	Discussion	

# AGENDA



Day 2: Tuesday, December 4

Session 2: Excellence in captive care

9.00-9.45	Keynote - Current and future status of ex-situ bears in India	Dr. Brij Kishor Gupta (30mins + 15mins Q&A)
9.45-10.45	Management of behavioural problems	Dr. Heather Bacon
10.45-11.15	Coffee and tea break	
11.15-12	Enrichment – what matters to the bear	Dr. Mindy Babitz
12-13.00	Integration of behavioural management and staff training	Annemarie Weegenaar
13.00-14.00	Lunch	
14:00-14.45	Introduction to behavioural management and training	Jay Pratte
14.45-15.30	Operant conditioning at WSOS	Dr. Ilayaraja, Dr. Pritim
15.30-16.00	Coffee and tea break with poster viewing	
16.00-17.30	Workshop session 1 (25 <i>delegate max per workshop</i> ) i: Husbandry & Enrichment Problem-Solving Workshop ii: Training and Operant Conditioning Workshop iii: Bear Veterinary Health and Welfare Workshop	Dr. Mindy Babitz, Angela Gibson Jay Pratte  Dr. Heather Bacon, Annemarie Weegenaar
17.30-18.00	Discussion	

# AGENDA



Day 3: Wednesday, December 5		
Session 3: Excellence in captive care - Veterinary		
5.30-9.00	Visit to Taj Mahal	
9.00-9.45	Assessment of physical health problems	Dr. Heather Bacon
9.45-10.45	Geriatric care	Dr. Heather Bacon (20mins), Dr. Arun (20mins), Dr. Ilayaraja (20mins)
10.45-11.30	Coffee and tea break	
11.30-13.00	Workshop session 2 (25 <b>delegate max per workshop</b> ) i: Husbandry & Enrichment Problem-Solving Workshop ii: Training and Operant Conditioning Workshop iii: Bear Veterinary Health and Welfare Workshop	Dr. Mindy Babitz, Angela Gibson Jay Pratte  Dr. Heather Bacon, Annemarie Weegenaar
13.00-14.00	Lunch	
14.00-15.30	Workshop session 3 (25 <b>delegate max per workshop</b> ) i: Husbandry & Enrichment Problem-Solving Workshop ii: Training and Operant Conditioning Workshop iii: Bear Veterinary Health and Welfare Workshop	Dr. Mindy Babitz, Angela Gibson Jay Pratte  Dr. Heather Bacon, Annemarie Weegenaar
15:30-16.00	Coffee and tea break	
16.00-17:00	Discussion	
17.00-18.00	Closing remarks and wrap up session	
19.30	Farewell dinner	



# AGENDA



Day 4: Thursday, December 6		
Field day Agra Bear Rescue Facility		
8.30	Depart Hotel / Volunteer House for Agra Bear Rescue Facility	
09:00-10:00	ABRF	Tour of Agra Bear Rescue Facility
10:00-10:30	Tea break	
10:30-12:30	Workshop	Enrichment Practicum - break into groups to build enrichment items for the bears 1. 25 things you can do with bamboo 2. 25 things you can do with jute bags
12:30-13:30	Lunch @ ABRF	
13:30-14:30	Workshop	Operant conditioning demonstrations 1. Positive reinforcement training 2. Medical assessments
14:30-15:30	Workshop	Observe bears using the enrichment created.
15:30-16:00	Tea break	
16:00-17:00	Workshop	Q&A and discussion on behavioural issues
17:00-17:30	Closing session	Group Photo
17:30	Depart for Delhi / Post conf. trip attendees to stay at Hotel GenX, Agra and depart for Ranthambore next morning. Others to be dropped off in Delhi at hotel or airport.	Arrival approx. 21:00



## PROTECTION AND WELFARE OF BEARS IN INDIA

Kartick Satyanarayan, Co-Founder and CEO, Wildlife SOS

India is home to some of planet earth's unique biodiversity and half of the world's eight species of ursids, sloth bear (*Melursus ursinus*), sun bear (*Helarctos malayanus*), Asiatic black bear (*Ursus thibetanus*) and the brown bear (*Ursus arctos*). Of the four species found in the Indian subcontinent, the sloth bear (*Melursus ursinus*) has the most widespread presence but is also the most vulnerable victim of habitat destruction, human-bear conflict and poaching. This species was also extensively harvested from the wild and exploited as dancing and performing bears for centuries. Therefore, this species is also the largest number amongst bears in captivity across Indian zoos and rescue centers. Wildlife SOS spearheaded a landmark conservation success story in India by systematically ending the 400 year-old barbaric 'dancing' bear practice in which sloth bear cubs were poached from the wild, brutally trained and forced to spend their short, tragic lives being dragged through streets to earn a living for the indigenous, nomadic Kalandar community that depended on the bears for their subsistence. The sustainable approach Wildlife SOS adopted to solving this centuries old problem, through rehabilitation of both the bears and members of the Kalandar community, created alternative livelihoods for the Kalandar men, empowered the women and supported education for over 6000 Kalandar children. This has made a difference in the conservation and protection of wild sloth bear populations in India. Wildlife SOS works with local communities to solve increasing problems of human-bear conflict through awareness and education of stakeholders in avoidance behavior. The four bear rescue centers run by Wildlife SOS, home to over 300 rescued sloth bears, have evolved into a platform for knowledge-gathering where all



possible efforts on enclosure enrichment, operant conditioning, behavior observation and ex situ research to support in situ bear conservation efforts have been ongoing. We hope to convey this knowledge through this conference to the many stakeholders who are here today, zookeepers, managers and others who can ensure that the lives of captive bears in all zoos and rescue homes improves in quality. We hope to convey this knowledge to the many stakeholders in Indian zoos to empower them with this ability to improve the quality of life for the captive bears in their care.

## **STATUS OF WILD SLOTH BEARS AND HOW THE CAPTIVE COMMUNITY CAN SUPPORT FIELD CONSERVATION**

**Dr. Dave Garshelis, MS, PhD, Wildlife Research Scientist with the Minnesota Department of Natural Resources; IUCN Bear Specialist Group Co-Chair and Asiatic Black Bear Expert Team Co-Chair**

**Dr. Nishith Dharaiya, PhD, Associate Professor of Environmental Science, Hemchandracharya North Gujarat University; IUCN Bear Specialist Group Sloth Bear Expert Team Co-Chair**

**Thomas Sharp, MS, Director of Conservation and Research for Wildlife SOS USA; IUCN Bear Specialist Group Sloth Bear Expert Team Member**

The sloth bear, listed as 'Vulnerable' on the IUCN Red List, is threatened with loss and degradation of habitat due to expanding human populations. The aggressive nature of this species makes them particularly incompatible with sharing habitats with people. In prime habitat, isolated from people, the species occurs at high density; however, insufficient information is known about its habitat needs to reliably assess its range-wide status. We will



present results of several habitat models with conflicting predictions of occupied range, and discuss recent data showing that sloth bears can cross wide expanses of sparsely-vegetated habitats occupied by people. Habitat models neglect the possibility that in some areas, sloth bears compete with Asiatic black bears, a species that seems to be more adaptable and resilient. Sloth bears were extirpated in Bangladesh and are also virtually absent in the lowlands of Bhutan, but Asiatic black bears persist in both places. We will discuss our new field study in Northeast India (and a companion study in Nepal), aimed at investigating competition/co-occurrence among these two, and possibly a third bear species (sun bears). We conclude with some ideas for how data on captive bears may help inform research and conservation efforts in the wild.

## **THE BEAR NECESSITIES... (OR, THE PRINCIPLES OF BEHAVIOUR-BASED BEAR HUSBANDRY)**

Jason (Jay) Pratte, MA, Behavioral Husbandry and Welfare Manager at Omaha's Henry Doorly Zoo & Aquarium and the Lee G. Simmons Conservation Park & Wildlife Safari

Wild and captive bears are born with a genetic complement of characteristics and drives that they need to live successfully in the wild habitat that they have evolved to occupy. They expect that their body and understanding of how to find food, mates, and lodging will work effectively with the environmental opportunities around them. Like their wild counterparts, captive bears want to engage in a myriad of species-specific behaviours. The further their captive environment veers away from their genetic expectations the more difficult it is for them to adapt, and the greater their stress level. Captive care professionals have learned

that mimicking animals' natural habitat and giving them the natural ingredients to express their normal daily and seasonal activity patterns reduce the stressors inherent in captivity and promotes mental and physical wellbeing. Behaviour-based husbandry is the deliberate provision of species-specific, internal and external care to animals befitting their genetic and circumstantial expectations. It is focused on the animals' agenda and includes enclosure design and furniture, ambient parameters (ex. photoperiod, temperature, sound), diet presentation and nutrition, daily and seasonal environmental complexity (ex. environmental enrichment programming), care and maintenance routines, communication (ex. operant conditioning), caregiver and animal relationship building, and veterinary care.

## **ANIMAL SENTIENCE AND THE ROLE OF THE MODERN ZOO IN WELFARE AND CONSERVATION**

**Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach Manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education**

Traditionally zoos were menageries of exotic and wild animals displayed for public entertainment, with little thought given to the role of the animals that they housed. The modern zoo should be a very different institution, with a focus on excellence in animal housing and husbandry, staff training, public education, research and conservation.

According to the Indian Central Zoo authority, zoos should develop

*"self-sustaining and genetically and behaviourally viable populations of animals pertaining to endangered species in the*



*wild, for use as gene pool to be used for long-term conservation of these species and to muster support of the zoo visitors in the national efforts for conservation of wildlife”.*

How animals are presented and exhibited will impact on the education of zoo visitors in the conservation, natural history and biology of the species. Healthy animals presented in naturalistic environments and displaying a variety of natural behaviours represent the important conservation and biological role of zoos. Animals exhibiting abnormal behaviours, or used in performances for entertainment, or as photographic props, are presented to the public as an economic commodity with no conservation education value. By examining current literature and sharing best practice, it is hoped that zoos will be empowered not just to rectify existing animal welfare problems, but to promote a proactive and preventative approach, providing animals with environments and husbandry routines which provide them with the opportunity to experience comfort and contentment, and enjoy a good quality of life.

This presentation will introduce the concepts of animal welfare in zoos and how good animal welfare supports effective conservation, discuss the current status of animal welfare in the global zoo industry, and will introduce solutions to problems commonly seen in India and elsewhere. Good animal welfare is essential in zoos.



## SLOTH BEAR - HUMAN CONFLICTS

Thomas Sharp, MS, Director of Conservation and Research for Wildlife SOS USA; IUCN Bear Specialist Group Sloth Bear Expert Team Member

Sloth bears are known for their aggressive behaviour toward humans. The total number of sloth bear–inflicted deaths that occur in India is unknown, though the annual number of casualties likely approaches 1,000 and appears to be rising. These attacks are having a negative effect on the conservation of this species. Wildlife SOS has been studying a behavioural approach to sloth bear safety by attempting to understand sloth bear attack motivations and behaviour. Additionally, we are analyzing a compilation of six studies that reported on sloth bear–human conflict to identify consistencies and inconsistencies about what is known of sloth bear attacks. The overall results of this study were both insightful and complex. The ultimate purpose of this research is to produce a messaging plan that will help people avoid sloth bear attacks, and, if necessary, illustrate how to behave during an attack to minimize injuries. The goal of this behavioural-based safety message is to not simply protect people, but reduce animosity toward sloth bears and, in turn, promote their conservation. To this end, we are also reviewing safety messaging that has already been disseminated for the American black bear, grizzly bear, and polar bear.



## EX SITU CONSERVATION- AN EFFECTIVE METHOD AND SUPPORT TOWARDS IN SITU CONSERVATION

Baiju Raj, BSc, MSc, PGES, Director of Conservation Projects at Wildlife SOS

Dr. Arun A Sha, MVSc, Director of Research and Veterinary Operations at Wildlife SOS

Wildlife SOS (WSOS) has set up India's first Private Public Partnership model rehabilitation center for sloth bears in collaboration with state forest departments. Sloth bears have been used for performing (dancing) on the streets for centuries; thus this project has become historic in the field of conservation. All of the "dancing bears" were voluntarily surrendered to the forest department by the Kalandars (bear dancers) and a rehabilitation package was provided to each family. Over 600 bears were rescued and surrendered. The bears are kept under quarantine for 90 days, conditioned to solar power fence and then provided access to large, forested enclosures. High quality, balanced and nutritious diets are provided to improve their health. The bears slowly start showing their natural behaviors like climbing, digging and foraging, as well as change their activity pattern to being more active in the late evening. With the state forest departments, WSOS has set up four such rehabilitation centers in the country. Today these centers not only take care of the existing population but also help the forest departments to mitigate human-animal interactions across the country; many wild bears are rescued and released back into the wild. WSOS also helps the Indian government to minimize the poaching of bears from various regions. A well-managed ex-situ conservation project is always considered as insurance for in-situ conservation. The bears which are rescued from human-bear interactions are radio collared and released back to their natural habitats. The





radio collars help us to understand the bears' movement patterns as well as the reasons behind human-interactions. These centers which have been set up in collaboration with the forest departments have not only ended the dancing bear trade but have also reduced the poaching of bears within the country so that wild populations are less exploited.

## NEONATAL CARE OF SLOTH BEAR CUBS

Dr. Arun A Sha, MVSc, Director of Research and Veterinary Operations at Wildlife SOS

Baiju Raj, BSc, MSc, PGES, Director of Conservation Projects at Wildlife SOS

Sloth bears are classified as vulnerable under the IUCN Red List of Threatened Species, and protected under Schedule I of The Indian Wildlife (Protection) Act, 1972. Their unique feeding ecology includes frugivory and myrmecophagy, making them specialists in their ecological niche. In last two decades Wildlife SOS has hand reared over 100 sloth bear cubs of different age groups (2 weeks to 2 years) that were confiscated or rescued from various situations such as forceful, early weaning due to illegal poaching. Orphaned cubs have not always received their mother's colostrum milk, making them vulnerable to various nutrition-based health issues on top of the physiological and psychological stress they have endured. Since sloth bear cubs will stay with their mothers until three years of age, depending on their gender, we will attempt to reunite the cubs with their mother if possible by tracking the mother or looking for an injured female caught in a snare around the same area as the cubs were found before we attempt to hand rear the abandoned cubs. If a reunion is not possible, the procedure of quarantine and socialization (if it is more than one individual) will be followed. The successful hand



raising of sloth bear cubs involves multiple challenges such as bottle feeding, stimulating the cubs to defecate and urinate, and providing them warmth, comfort and security as the mother would provide. In this presentation, the authors describe the protocol followed for raising neonate cubs in terms of suitable commercial milk replacers, feeding schedule and frequency, precautions, hygiene, routine body weight checks and assessment of body growth rate, safe and minimal handling of cubs depending on the rehabilitation plan, veterinary care, common health issues, preventive care, behavior and health monitoring of the cubs in addition to providing desired micro and macro captive habitats for housing the cubs.

## **CURRENT AND FUTURE STATUS OF EX SITU BEARS IN INDIA**

**Dr. Brij Kishor Gupta, PhD, Evaluation and Monitoring Officer at the Central Zoo Authority, Ministry of Environment, Forests & Climate Change, Government of India**

Of the eight species of bears in the world, four are found in India: the Asiatic black bear (*Ursus thibetanus*), sun bear (*Helarctos malayanus*), sloth bear (*Melursus ursinus*) and brown bear (*Ursus arctos*). There are 70 zoos and five rescue centres in India housing a total number of almost 700 (as of 31st March, 2018) individual bears in captivity for the purpose of conservation, public education, and for their lifetime care. Many of the bear enclosures in Indian zoos were built before the Central Zoo Authority (CZA) was in existence, hence design and dimension of enclosures varies from place to place and do not meet the standards and norms prescribed by the Central Zoo Authority for the best upkeep and veterinary care of the bears. The CZA has reformed its rules and norms, and zoos are being asked strictly to



adhered to them. There is currently urgent need for zoos to review whether their existing bear exhibits comply with the standards and norms prescribed by the CZA, and if not to improve them accordingly. All of the bear exhibits as well as the bears housed in lifetime care facilities should have enriched environments for the physical and mental well being of the animals. Zoos must ensure they maintain records, studbooks and inventories for scientific management of the bears. Additionally, further research on upkeep and veterinary care (husbandry protocols) of bears is needed immediately, and conservation breeding programmes for Himalayan brown bears and Malayan sun bears in off display facilities is required. In order to infuse new technology into the field of assisted reproduction, DNA fingerprinting (genetic analysis) and establishing cryo banking (Gene banks) of endangered species of bears for their scientific management is required. Institutions housing the bears need to conduct training programmes and workshops for all levels of zoo personnel (Director, Curator, Veterinarians, Biologist, Educators and Keepers) to enhance their efficiency and skill in zoo management, and to continue with innovative changes as part of capacity building. Zoos and rescue centre should contribute to the global awareness of bears by imparting their education & knowledge on bears, their behavior, importance, illegal trade, etc. to the masses through electronic media and publications.

## MANAGEMENT OF BEHAVIOURAL PROBLEMS

Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach Manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education

The field of zoo animal welfare science has developed significantly over recent years. However, despite this progress in terms of scientific research, globally, zoo animals still face many welfare challenges. Recently, animal welfare frameworks such as the "five domains" or "five needs" have been developed and suggested to improve the welfare of zoo animals, but without practical guidance such tools may remain abstract from the daily experience of zoo animals. Zoo animals have evolved in the wild to survive in specific ecological environments. When wild animals are kept in captivity, they must adapt to a new environment which requires new skills and behaviours. An animal's ability to adapt to zoo husbandry routines or environments may be affected by its own personality, cognition, evolutionary influences, rearing experiences and prior learning. Adaptation is stressful and where possible, zoos should modify their environments and husbandry routines to accommodate the animal's evolved behaviours in order to support them in a state of good welfare. Animals should be encouraged to express a diversity of behaviours similar to those seen in the wild. Data gathered by wildlife biologists is useful in determining which activities animals engage in naturally, and ensuring that those activities are provided for in the captive environment. This presentation outlines some of the barriers to implementing improved zoo animal welfare in practice, and proposes a strategy for the development of behavioural husbandry routines focused on the management and mitigation of abnormal repetitive behaviours. It will focus on enhancing zoo animal welfare by integrating aspects of ecology, ethology, and

clinical animal behaviour into a practical and comprehensive approach to behaviour-based husbandry.

## **ENRICHMENT – WHAT MATTERS TO THE BEAR?**

**Dr. Mindy Babitz, PhD, Senior Animal Keeper at the Smithsonian National Zoological Park**

Enrichment is an important part of any good captive husbandry program. Good husbandry promotes animal welfare in a captive setting and involves opportunities for animals to express species-specific behaviours. Enrichment programming is a husbandry tool for providing these species-specific opportunities in zoos, sanctuaries, and even rehabilitation settings. This presentation will discuss the basics of behaviour-based bear enrichment programming, with an emphasis on using natural history to meet species-specific needs; in other words, providing enrichment that matters to the bear. Examples of enrichment programming for Indian bears that fit into their daily husbandry routine, as well as habitat design, will be discussed. Inexpensive and readily available enrichment options will be highlighted.

## **INTEGRATION OF BEHAVIOURAL MANAGEMENT AND STAFF TRAINING**

**Annemarie Weegenaar, Director, Bears in Mind**

Excellence in captive bear care is only achieved when an integrated approach is taken and the bears are holistically managed. In some zoos and sanctuaries around the world skilled staff provide excellent care to the bears under their care. But in many other facilities, keepers have little or no previous experience caring for domestic animals or livestock, let alone captive wildlife. Not knowing how a bear lives in the wild and not understanding bear behaviour can quickly lead to a gap between what a bear wants and needs and what a bear receives in captivity. Bear

behaviour can easily be misinterpreted and improper handling by the keeper can result in unwanted behaviour from the bear. To address this, some facilities have employed foreign experts who train staff how to provide appropriate care to the animals to ensure optimum welfare. The aim is to build capacity within these facilities so one day there won't be a need for foreign experts anymore. Other facilities rely on in-country expertise and staff development.

In addition to staff training, the use of animal care protocols can ensure all essential tasks are completed at the end of each day and safety is ensured at all times. Creating these protocols together with the bear care staff ensures they are clear to everyone involved and the care staff is empowered and enthusiastic about the daily routine. Proper staff management is also important; regular talks about bear behaviour, and providing resources such as literature, videos and such will help bear keeping staff gain a greater understanding of the animals they work with. Appropriate pay and other benefits for keeping staff are also an important part of a facility who wants the best for their animals.

## **INTRODUCTION TO BEHAVIORAL MANAGEMENT & TRAINING**

Jason (Jay) Pratte, MA, Behavioral Husbandry and Welfare Manager at Omaha's Henry Doorly Zoo & Aquarium and the Lee G. Simmons Conservation Park & Wildlife Safari

Operant conditioning is one tool in our behaviour-based husbandry repertoire that enables us to better communicate with and manage the animals in our care. Training is how we as caregivers are able to better teach the animals what is expected of them in an environment where they historically do not have as



much control over their lives as they would in their natural environment. Training an animal the basic concept that they will be rewarded for specific actions allows us to encourage them to train and exhibit a wide range of behaviours that make captive management much easier. The basics of operant conditioning are outlined, along with the general framework of establishing a training program. The importance of understanding natural history of the species is vital, along with an individual animal's history and personality traits. Several examples of useful behaviours are illustrated to demonstrate just a few trained responses that can improve our daily care routines. The importance of training will be discussed, including relationship building, stress reduction, as well as improved communication and understanding.

## **OPERANT CONDITIONING THROUGH POSITIVE REINFORCEMENT OF CAPTIVE SLOTH BEARS (*MELURSUS URSINUS*) FOR IMPROVED HUSBANDRY PRACTISES AT WILDLIFE SOS**

Dr. Ilayaraja Selvaraj, BVSc, PGDWADM, Deputy Director of Veterinary Services at Wildlife SOS

Dr. Acharya P.R, MVSc, Wildlife Veterinary Officer at Wildlife SOS

Dr. Arun A Sha, MVSc, Director of Research and Veterinary Operations at Wildlife SOS

Unlike domesticated animals, providing care and treatment for captive wild animals requires additional precautions to ensure the safety and comfort of the animals as well as the personnel involved. Hence, it is mandatory to adapt techniques to achieve this while causing minimal stress to the animals and personnel. In developed countries, animal care staff in zoos train animals to voluntarily participate in certain procedures using operant



conditioning with positive reinforcement. This allows for better provision of stress-free healthcare to animals. However, in India, the technique of operant conditioning through positive reinforcement is yet to be developed and practiced due to lack of knowledge and lack of manpower in Indian zoos. Wildlife SOS took immense efforts to provide better care for the rescued dancing sloth bears by establishing a unique rescue and rehabilitation facility for their welfare. This, in turn, created an opportunity for the animal care staff to learn operant conditioning techniques and provide continuous encouragement to practice the same. By using positive reinforcement we achieved voluntary blood collection, oral cavity examination, nail trimming, wound dressing and abdominal ultrasonography examination with sloth bears. Though the task is time consuming and sometimes demanding, it is worth practising, especially for animals that are unfit for chemical immobilization and those who need regular monitoring.

## **ASSESSMENT OF PHYSICAL HEALTH PROBLEMS**

**Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach Manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education**

Health assessments in zoo animals can be logistically challenging. Zoo animals are often large, potentially dangerous and thus difficult to handle. Additionally there is often a relative lack of knowledge regarding diseases syndromes and increased risks associated with anaesthesia for examination when compared to domestic species. This presentation will outline the principles of non-invasive health assessment, in addition to outlining common disease syndromes in bears that may require





intervention under anaesthesia. We will discuss the approach to planning a structured programme of health assessments and how a preventative medicine programme can mitigate the risks of disease and injury in zoo species. This presentation will be beneficial to both veterinary surgeons and to animal care and management staff, emphasising the need for effective reporting and teamwork in developing a preventative medicine programme.

## **GERIATRIC CARE**

**Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach Manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education**

Bears in captivity may live in excess of 35 years. This is significantly longer than their wild lifespan of 20-25 years, and with this extended lifespan comes a variety of husbandry and medical considerations that must be addressed in order to meet the bear's welfare needs. Primary medical disorders include mobility, cardiac, renal, ocular and dental disease, as well as behavioural and mental health complications. These disorders are often painful and need increased veterinary care in addition to more intensive husbandry and management practices. Based on experiences with geriatric bears in Europe and Asia, and on current literature, this presentation will aim to discuss the primary aspects of managing pain in geriatric bears.



## **GERIATRIC CARE OF CAPTIVE SLOTH BEARS (MELURUS URSINUS)**

Dr. Arun A Sha, MVSc, Director of Research and Veterinary Operations at Wildlife SOS

Dr. Ilayaraja Selvaraj, BVSc, PGDWADM, Deputy Director of Veterinary Services at Wildlife SOS

Sloth bears are one of the four bear species in India and one which has been highly exploited by people for several centuries. They have been poached since time immemorial for their body parts and cubs are taken away after killing the sow for use in street performances. Several literatures quote the lifespan of sloth bears in the wild to be between 25 to 30 years, however the rescued bears very rarely reach this age due to their appalling previous life. As per the current understanding and authors experience over 15 years of sloth bear work, captive sloth bear age classes are being standardised as Neonate (< week), Cub (< year), Juvenile (1-2 years), Sub-adult (3-4 years), Adult (5-20 years) and Geriatric (>20 years). It is mandatory to perform a detailed clinical examination on every animal at the time of rescue and estimation of approximate age of the animal is of utmost importance to provide the necessary treatment and post-rescue management. It has been observed that the behaviour of younger animals towards a geriatric individual is of dominance, and hence management of these aged animals requires a complete hierarchy-based approach. Such animals need to be housed in systems that encourage minimal activity patterns along with compatible social interaction. Geriatric animals in captivity are more prone to problems such as cancers, claw avulsion, impaired vision and hearing, gallbladder diseases, locomotor disorders, muscle atrophy, arthritis, pyometra, skin infections, and other bacterial and viral diseases. Periodic



chemical immobilization of such animals must be reduced, in favor of behavioral restraint for medical exams through the use of operant conditioning with positive reinforcement. A geriatric based protocol in terms of customized diet, feeding regime, and enrichments should also be strictly followed.



## HUSBANDRY AND ENRICHMENT PROBLEM SOLVING WORKSHOP

Dr. Mindy Babitz, PhD, Senior Animal Keeper at the Smithsonian National Zoological Park  
Angela Gibson, MS, Animal Keeper and Behavioral Husbandry Coordinator at Northwest Trek Wildlife Park

The ability for animals to express species-specific behaviours in captivity reduces stressors inherent in captive living and promotes their physical and mental health. This workshop will present a simple problem-solving worksheet that can be used to help brainstorm solutions to husbandry issues with a focus on identifying bears' daily and seasonal "living strategies" based on their natural and individual histories. Species-specific behavioural goals will be identified along with ideas and action steps to reach those goals using enrichment programming, husbandry changes, and habitat alterations. Delegates are encouraged to bring their real-life husbandry or behavioural problems to share so the group can work through and discuss the problem-solving method together.

## TRAINING AND OPERANT CONDITIONING WORKSHOP

Jason (Jay) Pratte, MA, Behavioral Husbandry and Welfare Manager at Omaha's Henry Doorly Zoo & Aquarium and the Lee G. Simmons Conservation Park & Wildlife Safari

This workshop will discuss the importance of incorporating a long-term training program into your animal care routine. Species differences and history are important considerations while planning your behavioral training goals. Building trust and creating a working relationship with the animal is vital. The



training process will be broken down and components presented: goals, cues, bridges, tools, environment, records, and safety. How to initiate training and the various methods for teaching behaviors are described, along with the process of shaping behavior to reach more complex training goals. Teamwork and communication are important to the entire process if you want to succeed with managing a behavior-based training program with bears or any other species.

## **BEAR VETERINARY HEALTH AND WELFARE WORKSHOP**

Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach Manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education

Annemarie Weegenaar, Director of Bears in Mind

Bears of all species are commonly held in captive collections around the world. Despite this, there is little existing literature on common medical problems or how best to manage their husbandry and environment to promote optimal health. A number of well documented medical phenomena such as alopecia, stereotypy, dental disease, ocular problems, heart disease and osteoarthritis exist in captive bears, and varying amounts of information are known about each. Additionally many bears in the captive situation have previous experiences of psychological trauma, which may have long-term impacts on their mental health. Participants at this workshop are encouraged to share case studies, or raise questions for group discussion during the workshop. Both veterinary and non-veterinary participants are welcome.



## OVERVIEW OF THE SLOTH BEAR EEP (EUROPEAN ENDANGERED SPECIES PROGRAM)

Marcel Alaze, Curator, Allwetterzoo Münster

“The European Endangered Species Program (EEP) aims at conserving healthy populations of animals in captivity while safeguarding the genetic health of the animals under our care. This program acts to provide a future for some of the world’s most vulnerable species, especially where education and in-situ conservation work are able to stabilize natural habitats and change destructive behaviors ([www.eaza.net](http://www.eaza.net)).” This poster gives an overview of the sloth bear population which is managed in the EEP and explains what EEP/EAZA (European Association of Zoos and Aquaria) stand for. The sloth bear population in European zoos is quite low and we have only a small number of holders. The maintenance of a healthy and genetically stable population of a small number of individuals is difficult. To manage such a small population in captivity it is really important to improve the population with a high quality breeding management program over the years. The importation of new founder animals into the population can also improve the situation. During the last couple of years we have had some transfers of sloth bears in and out of the EEP. We are now breeding successfully with new founder animals in the population which will increase the genetic stability of the sloth bear EEP.

## BEAR ALERT – IMPROVING CAPTIVE BEAR WELFARE

Koen Cuyten, Project Coordinator, Bears in Mind

Annemarie Weegenaar, Director, Bears in Mind

Many captive bears live under horrible conditions - in tiny cages next to restaurants, in roadside zoos and in people’s backyards.

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In Europe this mainly concerns non-EAZA (European Association of Zoos and Aquaria) facilities. Bears in Mind has developed a unique project called Bear Alert to keep track of the many captive bears housed under suboptimal conditions. Bears being kept inappropriately are reported on [www.bearalert.org](http://www.bearalert.org) by tourists, local NGOs and other concerned citizens. In close co-operation with various institutions and welfare organisations, data on hundreds of bears in captivity has been gathered and logged. Unfortunately, some bears continue to wait for a better life as laws regarding bear keeping in some countries are non-existent or are not enforced appropriately. But many of these bears have been transferred to a sanctuary or a zoo where proper care and space could be offered. One of these sanctuaries is the Bear Forest in Ouwehand Zoo in Rhenen, the Netherlands, an initiative from Bears in Mind. Other bears are profiting from improved husbandry, with advice given by the experienced staff at Bears in Mind. A central database could help improve the lives of many bears still kept under miserable conditions.

## **INCREASING CAPACITY AND ANIMAL WELFARE STANDARDS IN VIETNAMESE WILDLIFE REHABILITATION CENTRES**

Sarah van Herpt, MSc, Bear Manager, Animals Asia, Vietnam Bear Rescue Centre

Heidi Quine, MSc, Bear and Vet Team Director, Animals Asia, Vietnam Bear Rescue Centre

Hoang Van Chien, Bear Team Supervisor, Animals Asia, Vietnam Bear Rescue Centre

In 2017 Animals Asia signed an MOU with the Vietnamese government with the goal of ending bear bile farming by 2022. One of the effects of this is that the approximately 800 bears

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remaining on farms will need to be placed in sanctuaries, yet the standards of welfare and bear care knowledge in some Vietnamese run facilities are not high. Animals Asia's Vietnam Bear Rescue Centre (VBRC) has begun an outreach programme to increase the capability of government facilities currently housing bears. Hoang Lien National Park Rescue Centre is currently home to two Asiatic black bears. A team from VBRC have travelled to the centre on four separate occasions to teach staff about behaviour, husbandry and nutrition, improve enclosures, integrate the two bears and perform health checks. Similarly, staff from Hoang Lien have travelled to VBRC to attend two week-long workshops covering both the practical and theoretical aspects of excellent bear care. One of the milestones of this program has been the integration of the two previously singly housed bears. Working collaboratively with the Hoang Lien team through every step of the process, from designing an integration procedure to conducting the integration itself, was an invaluable opportunity to teach the importance of a holistic approach to animal care. Hoang Lien staff have proven to be interested, engaged and have persisted at putting the various things they have learnt into practise leading to tangible improvements in the welfare experienced by both bears. As the bear bile industry collapses in Vietnam, improving the capacity of other rehabilitation centres is crucial to expand their capacity to receive additional rescues and ensure bears experience good welfare.





## FIRST REPORT ON PROBIOTIC - LACTOBACILLUS PLANTARUM FROM SLOTH BEARS (MELURUS USINUS) IN INDIA

Dr. M. Palanivelrajan, PhD, Assistant Professor, Department of Wildlife Science, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University

Dr. Arun A Sha, MVSc, Director, Research & Veterinary Operations, Wildlife SOS, Bannerghatta Bear Rescue Centre

M.G. Jayathangaraj, Professor and Head, Department of Veterinary Clinical Medicine, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University

K. Vijayarani, Professor and Head, Department of Animal Biotechnology, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University

Bhaskaran Ravi Latha, Professor and Head, Department of Veterinary Parasitology, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University

P. Sridevi, Professor, Department of Clinics, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University

The intestinal microbiota composition depends on the gut physiology and diet of animals. Previous reports said that the facultative anaerobes Enterobacteriaceae and enterococci were dominant in wild bear feces. In general, the most common microorganisms used as probiotics are lactic acid-producing lactobacilli and bifidobacteria. There is no data on probiotics from the gut microbiota of sloth bears (*Melursus ursinus*). The main purpose of this study was to investigate and characterize the probiotics in feces from individual sloth bears (n=60) reared at the Wildlife SOS, Bannerghatta Bear Rescue Centre (BBRC),

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Bangalore, Karnataka. Fecal samples were grown on MRS agar and the growth morphology of *Lactobacillus* bacteria was observed as creamish white circular shaped colonies. Phenotypically, the isolates were Gram positive stained rods and negative for catalase, oxidase, indole test, methyl red test, Voges-Proskauer test, citrate utilization test and carbohydrate fermentation. DNA was extracted by boiling method and *Lactobacillus* spp., 16S rDNA primers were used for the detection of *Lactobacillus* spp. by PCR. The amplified PCR product was sequenced, and the isolates were identified as *Lactobacillus plantarum*. For the characterization, the growth tolerance of *Lactobacillus plantarum* was observed in NaCl and bile salt. The probiotic bacteria in faeces from sloth bears was isolated and identified as *Lactobacillus plantarum*. Naturally, probiotics prevent gastrointestinal diseases and modulate the intestinal immune response. Hence, this study provided the information on *Lactobacillus plantarum* in sloth bears and suggested for further research on the importance of the identified probiotics in sloth bears.

## FINDING COMMON GROUND IN ANIMAL LAW: PETA AND AZA-AFFILIATED EXPERT COLLABORATION

Brittany Peet, Esq, Director of Captive Animal Law Enforcement, PETA Foundation

Jay Pratte, MA, Behavioral Husbandry and Welfare Manager at Omaha's Henry Doorly Zoo & Aquarium and the Lee G. Simmons Conservation Park & Wildlife Safari

The poster will highlight the collaborations between PETA and AZA-affiliated experts over the past few years. By finding common ground, members of both the accredited zoological community and the captive wildlife advocacy community have made



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incredible progress for animals, achieving:

- A first-of-its-kind legal precedent declaring that declawing Endangered Species Act-protected cats violates federal law,
- the first ever preliminary injunction preventing the unnecessary premature separation of big cat cubs from their mothers and the use of cubs in public encounters,
- closure of antiquated roadside zoos and traveling exhibitors,
- rescue of dozens of animals, including bears, tigers, and an elephant.

Working together remains highly controversial on both sides, but each has much to learn from the other, and collaborating builds bridges that lead to amazing results for captive wildlife.

## **STORYTELLING BEARS - USING INDIVIDUAL BEAR PERSONALITIES, PROCLIVITIES, AND PAST HISTORIES TO INFORM AND INSPIRE ZOO GUESTS**

Courtney Rogers, Senior Animal Keeper at Cheyenne Mountain Zoo

Cheyenne Mountain Zoo is home to grizzly bears “Emmett” and “Digger.” While their personalities are vastly different, their stories are similar and all too familiar. Deemed “nuisance bears” in their native Montana, both bears ran out of chances to remain wild. Through good luck and great timing, they were not euthanized and instead traveled to Colorado to become ambassadors for their kind. Animal keepers wanted to find a way to forge an impactful connection between zoo guests and bears in order to protect their wild counterparts. Emmett and Digger provided inspiration for talking points and trained behaviors, which are used in daily animal behaviour demonstrations and behind the scenes encounters. Learning and sharing about each bear’s



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personality traits, unique quirks, favorite foods, and preferred activities provided ample opportunities for guests to find common ground with bears. Each bear's individual behaviours provided much of the material used in the "Bear Necessities" demonstration, including Emmett's unique method of taste testing food, and Digger's usually ineffective fishing techniques. Both bears show off their love of breaking into bird seed, a skill that once got them into trouble, and help us encourage guests to be responsible and aware in bear country. Emmett and Digger are now two of the most requested animals for behind the scenes tours, and many people who meet them come back over and over again. The "Bear Necessities" demonstration is one of the most popular demos at the zoo, with guests who come to see it every time they visit. There are now people all over the world who know that Emmett hates broccoli and that Digger can beat them in a peanut shelling contest. These visitors also now know how to live and recreate responsibly in bear territory, and they know first-hand why it is so important.

## **SUMATRAN SUN BEAR TEAM; WHY IT NEEDED TO BE FORMED**

Lesley Small, Founder, Sumatran Sun Bear Team

Imogen Williams, Secretary, Sumatran Sun Bear Team

The Sumatran Sun Bear Team (SSBT) is an Australian charity with plans to build a conservation and rescue centre for sun bears (*Helarctos malayanus*) in Sumatra. Sumatra is an Indonesian island covering 470,000 square kilometres, with a population of over 50 million people. Habitat loss is a huge issue facing Sumatran wildlife, with illegal hunting, accidental snaring and human conflict impacting greatly on its mammals, birds and reptiles. Sun bears are classified as 'Vulnerable' by the IUCN, yet

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currently there are no NGO's singularly focused on saving and protecting sun bears in Sumatra. With the sun bear being a 'protected species', the Indonesian government will confiscate illegally acquired bears, yet they have no reasonable facilities in which to place the bears. Sun bears are held in some government facilities for years in small, barren cages. If they are transported to local zoos, this too is a sub-standard option. With rehabilitation and release being complex and expensive, release is not currently an option for most sun bears. There is no other option than to form a new organisation before the Sumatran sun bear is gone forever. The SSBT have been offered a great piece of land to purchase near Bukit Lawang; a village bordering the Gunung Leuser National Park. We will work with local communities to reduce human-bear conflict and set up educational programs to promote a clearer understanding of the benefits of having sun bears in the forests. We will work closely with government agencies, enabling them to place confiscated sun bears. SSBT will employ rangers to conduct anti-snare programs and engage biologists to conduct forest health studies. Our centre will give rescued sun bears an opportunity to rehabilitate if they meet selected criteria with proven skills, and an opportunity to be released back into the wild according to IUCN guidelines and our team working with relevant government agencies.



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**Marcel Alaze, Curator, Allwetterzoo Münster.** Marcel started his apprenticeship as a professional zookeeper in 2000 at "Rheine Zoo" in Germany where he worked afterwards as a deputy team leader for the carnivore and hoofstock section for about 10 years. During that time they built a new sloth bear enclosure and Marcel was involved in the construction work, sloth bear transfers and developing the entire husbandry program. In 2012 he moved to Leipzig Zoo and worked there as the head of the Asian section where amongst other things he was responsible for the biggest sloth bear population in European zoos. In 2015 Marcel became the EEP (European Endangered Species Program) coordinator for sloth bears. Since 2016 he has worked at "Münster Zoo" as a curator where he manages the sloth bear population in EAZA (European Association of Zoos and Aquaria) institutions. Marcel would like to focus more on research and conservation of sloth bears in the future.

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**Dr. Mindy Babitz, PhD, Senior Animal Keeper at the Smithsonian National Zoological Park.** Dr. Mindy has been an animal caregiver for two decades, working with a variety of animals including four species of bears. Her specialty is captive husbandry and welfare for sloth bears. Dr. Mindy is part of the National Zoo's carnivore hand-rearing team and has experience raising a sloth bear cub. She is the National Zoo's Institutional Representative to the American Association of Zoos and Aquariums' (AZA) Sloth Bear Species Survival Plan and is also on the Steering Committee for AZA's Bear Taxon Advisory Group.

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Dr. Mindy has a PhD in Psychology with a focus on animal behavior and cognition. She currently conducts research on stereotypical behavior in sloth bears and is primarily interested in improving husbandry and management of sloth bears in zoos. Dr. Mindy is on the board of directors of the Bear Care Group and is currently serving as the Vice President and Treasurer.

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**Dr. Heather Bacon, BSc (Hons), BVSc, CertZooMed MRCVS, Veterinary Welfare Education and Outreach manager at the University of Edinburgh's Jeanne Marchig International Centre for Animal Welfare Education.**

Dr. Heather lectures on captive wildlife welfare issues, and works with zoo associations and NGOs around the world. She has also worked with the European Commission to develop continuing education on captive wildlife welfare in Europe, contributed to the Good practice guide for implementation of the European Union Zoos Directive, and the Association of British Travel Agents guidelines for the use of wildlife in responsible tourism. She is a member of the British Veterinary Association's Ethics and Welfare committee, the Zoological Society of London's Animal Welfare committee, the British and Irish Association of Zoos and Aquaria Ethics committee, and the European Association of Zoos and Aquaria Animal Welfare Working group. Dr. Heather provides consultancy services to zoos and NGO's on bear husbandry and animal welfare issues. She is on the board of directors of the Bear Care Group, has co-authored several papers on animal welfare and bear veterinary care, and previously worked as the Veterinary



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Director at the Animals Asia Foundation, an NGO working to end the trade in bear bile across Asia. In addition to her veterinary degree, she holds a BSc (Hons) in Conservation Medicine and a BSc (Hons) in Conservation Medicine and a Royal College of Veterinary Surgeon's Advanced Practitioner in Zoological Medicine.

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**Koen Cuyten, Project Coordinator, Bears in Mind.** An interest and passion for the natural world and the living creatures in it was triggered at an early age. During his study of Animal Management, Koen had the opportunity to study the bears in the Bear Forest at Ouwehand Zoo up close and personal. After his bachelor degree study he started helping Bears in Mind as a volunteer. In 2005 he joined the foundation permanently and has been working as Project Coordinator ever since. Koen's work at Bears in Mind is highly inspiring and motivating, but also challenging, as the need to help captive bears in distress and protect wild bears in their natural environment is ever present. Koen wants to contribute his part and leave this world a wilder place for his children, where bears and people can live in harmony. Koen also works for the Rewilding Foundation, on projects advocating the safeguarding and restoration of large-scale interconnected ecosystems, where large carnivores such as leopard and wolf as a keystone species play a vital role.





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**Dr. Nishith Dharaiya, PhD, Associate Professor of Environmental Science, Hemchandracharya North Gujarat University; IUCN Bear Specialist Group Sloth Bear Expert Team Co-Chair.** Dr. Nishith is currently positioned as an associate professor of Environmental Science in Gujarat, India. For the past 18 years he has been working mainly on large mammal ecology and biodiversity monitoring in Gujarat. He did his doctorate on the ecology and behavior of Asiatic lions. Since 2006 he has been doing research on sloth bears, investigating distribution, population monitoring, and human-bear conflicts in Gujarat mainly, now extended to other states and countries including Maharashtra, Rajasthan and Bhutan. Dr. Nishith has developed a revised map of Sloth bear distribution in the world for the IUCN and also authored the Bear conservation action plan for Gujarat. In addition to sloth bear research, he has conducted studies focused on wetland monitoring and monitoring of small mammal populations in Gujarat, and supervising work on pesticide contamination in wetlands. Dr. Nishith is working toward collaborative capacity building programmes for wildlife conservation at his university. He has coordinated the recent sloth bear population estimation in Gujarat state with the Gujarat forest department. Dr. Nishith aspires to elevate and direct young researchers towards the conservation of wildlife and habitat.

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**Dr. Dave Garshelis, MS, PhD, Wildlife Research Scientist with the Minnesota Department of Natural Resources; IUCN Bear Specialist Group Co-Chair and Asiatic Black Bear Expert Team Co-Chair.** Dr. Dave is a Wildlife Research Scientist with the Minnesota Department of Natural Resources (MDNR). Since 1983, as bear project leader for the MDNR, he has conducted population and ecological studies of American black bears across their geographic range in Minnesota, with direct application in management of the state's bear population. As an adjunct professor at the University of Minnesota, he has advised graduate students on studies of most of the other bear species of the world, aimed at improved conservation. Previously he studied black bears in the Great Smoky Mountains for his M.S. degree (University of Tennessee) and sea otters in Alaska for his PhD (University of Minnesota). His current interests are in monitoring trends of bear populations, discerning factors limiting population growth, and understanding ecological adaptations of bears, especially in human-modified environments or at the edge of their geographic range.

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**Angela Gibson, MS, Animal Keeper and Behavioral Husbandry Coordinator at Northwest Trek Wildlife Park.** Angela is a large carnivore keeper and the behavioral husbandry coordinator at Northwest Trek Wildlife Park where she has worked since 2008. Angela has worked with bears, canids, felids, mustelids, primates, and hoofstock. She is the Northwest Trek's institutional representative on the AZA Bear Taxon Advisory Group (TAG) as well as a member of the Bear TAG's Steering Committee. Angela has a background in animal behavior,

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completing a BS and an MS in Biology from Missouri State University. Angela is on the Board of Directors of the Bear Care Group.

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**Dr. Brij Kishor Gupta, PhD, Evaluation and Monitoring Officer with the Central Zoo Authority, Ministry of Environment, Forests and Climate Change, Government of India.** Dr. Brij has been working in the fields of animal behavior, ecology, conservation, education, and zoo management for more than two decades. In his current work with the CZA, Dr. Brij is responsible for evaluating and monitoring zoos throughout India with respect to their norms and conditions, and assisting senior officers with legislation, policy, regulations, norms guidelines, and scientific management of zoos. He also teaches on various subjects of ex situ management to zoo and forestry personnel in India. Dr. Brij is a member of the CZA's Expert Group on Zoo Designing and scrutinizes master plans and animal exhibit designs for zoos, animal parks and rescue centers. Dr. Brij has authored more than 100 scientific papers and six books on exhibit design, zoo master planning and design, animal enrichment, captive animal management, and more. His most recently published book is "Enriching Lives: Improving the Well Being of the Captive Animals". Dr. Brij is a member of both the Conservation and Sustainability Committee, and the Committee for Population Management of the World Association of Zoos and Aquariums, as well as the International Primatological Society's Captive Care and Breeding Committee. He is also a member of the IUCN Species Survival Commission (SSC) Conservation



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Planning Specialist Group, the IUCN SSC Bear Specialist Group, Captive Bear Expert Team, and the South Asian Amphibian and Reptile Specialist Groups. Dr. Brij also serves as the regional representative for both the Durrell Wildlife Conservation Trust and the International Zoo Educators Association. Dr. Brij has received numerous awards for his work including the Proggy Award for Animal Welfare Scientist and the International Animal Rights Leadership Award from People for the Ethical Treatment of Animals (PETA), the 2010 International Conservation Award from the Association of Zoos and Aquariums (AZA), and the 2016 Heroes of Animal Protection Award from the Federation of Indian Animal Protection Organisations (FIAPO).

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**Sarah van Herpt, MSc, Bear Manager, Animals Asia Vietnam Bear Rescue Center.** Sarah has an MSc in Conservation Biology and is a qualified vet nurse. She spent 7.5 years working as a zookeeper in New Zealand before moving to Vietnam at the start of 2017. Sarah currently works for Animals Asia as a bear manager; looking after some of the 173 bears onsite. She is passionate about animal behaviour and enjoys developing training and enrichment programmes to assist in the rehabilitation of bears.

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**Dr. Ilayaraja Selvaraj, BVSc, PGDWADM, Deputy Director of Veterinary Services at Wildlife SOS, India.** Dr. Ilayaraja has been working in the field of veterinary care, rescue and rehabilitation of wildlife for more than a decade. During this time he has co-authored several papers on wildlife veterinary medicine, rehabilitation and conservation, as well presented his work at numerous conferences around the world, receiving awards for some of these presentations. With a Post Graduate Diploma in Wild Animals Disease Management, Dr. Ilayaraja has worked as a Wildlife Veterinary Officer at the Agra Bear Rescue Facility since 2004 and the Elephant Conservation Care Center since 2009. Since 2015 he has worked as the Deputy Director of Veterinary Services for Wildlife SOS. Dr. Ilayaraja's work in rescue, treatment and relocation of wild bears has been recognized by the J & K Wildlife Protection Department, the Himachal Pradesh forest department, and the Uttar Pradesh forest department. He is also an invited speaker at the Wildlife Institute of India. Dr. Ilayaraja is a member of the Tamil Nadu Veterinary Council and the Association of Indian Zoo and Wildlife Veterinarians.

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**Dr. M. Palanivelrajan, PhD, Assistant Professor, Department of Wildlife Science, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University.** Dr. M. Palanivelrajan has been working as Assistant Professor in the Department of Wildlife Science at Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences



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University since 2010. He teaches wild and exotic animal medicine to students, has guided the research of five master degree students as their graduate committee chairman and has been a graduate committee member for seven students in wildlife science specialisation. Dr. M. Palanivelrajan has published nearly forty five research papers and clinical reports in peer reviewed journals, and has authored three books and ten digital resource guides on wildlife. His current research work is on enteric pathogens and probiotics in sloth bears (*Melursus ursinus*) and identification of endoparasites in the field by using foldscope. He was honoured with three international and three national awards, and selected two times (2017 & 2018) for the “Murray Fowler International Conference Scholarship” by the American Association of Zoo Veterinarians.

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**Brittany Peet, Esq, Director of Captive Animal Law Enforcement, PETA Foundation.** Brittany Peet is the Director of Captive Animal Law Enforcement for the PETA Foundation. Brittany, an attorney, works on behalf of animals who are held captive in roadside zoos, traveling shows, and the film and television industries. She also coordinates wild and exotic animal rescues for PETA, and has overseen the rescues of more than 400 chinchillas, 72 bears, 39 tigers, ten chimpanzees, and two baboons.

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**Jason (Jay) Pratte, MA, Behavioral Husbandry and Welfare Manager at Omaha's Henry Doorly Zoo & Aquarium and the Lee G. Simmons Conservation Park & Wildlife Safari.** Jay is internationally known for his animal behavior and welfare work. He has been an animal caregiver for over two decades, and during his tenure has worked with a variety of animals, including all eight extant bear species. Behavioral husbandry training of carnivores is Jay's specialty, focusing on complex medical goals and training animal keepers around the world in operant conditioning techniques to improve animal husbandry. His work has been showcased on Animal Planet's "Growing Up Panda". Jay has trained animals for the film industry, and has worked with animals in settings from game farms to AZA accredited zoos, with species ranging from ant colonies to giant pandas. Jay is a founding board member and currently president of the Bear Care Group. His Master's degree is in Zoo and Aquarium Management, he has authored numerous publications related to the field, and is a co-editor for the American Association of Zoo Keeper's "Training Tales" column in the Animal Keeper's Forum. Jay is also an adjunct professor at the University of Nebraska at Omaha, teaching Animal Behavior classes and labs, and his own special topics class on Human – Animal Interactions. He regularly acts as a behavior and welfare consultant for several groups dedicated to improving the husbandry and welfare of animals, and has been instrumental in addressing the welfare of bears in traveling circuses and substandard roadside facilities.

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**Dr. Acharya P. Rajkumar, MVSc, Wildlife Veterinary Officer at Wildlife SOS.** Dr. Acharya has been working as a wildlife veterinary officer with Wildlife SOS for the past year. He attained his MVSc in Veterinary Surgery and Radiology from Bombay Veterinary College, Mumbai. Dr. Acharya has had a particular interest in caprine and snakes, and has published articles and presented veterinary case reports at various seminars and conferences in India.

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**Baiju Raj, BSc, MSc, PGES, Director of Conservation Projects at Wildlife SOS, India.** Baiju has been working in the fields of wild animal rescue and management, tribal community development, and wildlife education and training for over a decade. His work includes training forest officials, zookeepers and students across India, working with state forest departments and police to combat illegal wildlife trade, and coordinating wildlife rescue teams that operate in India. Baiju has published several papers on topics related to wildlife welfare and conservation, and presented his work at conferences around the world. He is a member of the IUCN SSC crocodile specialist group and a Special Officer with the Wildlife Crime Bureau, Government of India.

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**Courtney Rogers, Senior Animal Keeper at Cheyenne Mountain Zoo.** Courtney Rogers is a Senior Animal Keeper at Cheyenne Mountain Zoo in Colorado Springs, CO. She met the zoo's two grizzly bears during an internship in 2011, and immediately fell in love with their unique combination of intelligence, dignity, and humor. They have since helped shape her career and conservation goals in ways too numerous to count. Courtney enjoys connecting with Colorado locals who visit the zoo, and creating awareness and respect for native wildlife. She works with an amazing team of animal keepers caring for 17 species of animals in the Rocky Mountain Wild and Asian Highlands areas of the zoo, including the same grizzly bears who knew her as an intern.

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**Kartick Satyanarayan, Co-Founder and Chairman of Wildlife SOS, India.** Kartick has led an effort to end the 'dancing bear' practice in India that had persisted for centuries. The success of this project is attributed to addressing the problem from many angles including protecting wild bears in their natural habitat, developing anti-poaching programs, creating vocational programs for local Kalander tribes and operating bear rescue centers. In addition to overseeing these programs and eight wildlife rescue centers, Kartick works tirelessly to train forest officials and prosecutors on how to fight wildlife crime and train village leaders on ways to prevent human bear conflict. He has been involved in wildlife conservation, welfare and nature protection for over two decades, and has presented his work at numerous conferences and workshops around the world. Kartick



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is a Member of the Indian Government's Central Zoo Authority, a Member of the IUCN Bear Specialist Group (Sloth Bear Expert Team), and was awarded the Indira Gandhi Paryavaran Puraskar (Environment) Award by the Indian Government's Ministry of Environment and Forests in 2014.

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**Dr. Arun A Sha, MVSc, Director of Research and Veterinary Operations at Wildlife SOS, India.** Dr. Arun has been working in the field of veterinary care, rescue and rehabilitation of wildlife for more than a decade. During this time he has co-authored several papers on wildlife veterinary medicine, rehabilitation and conservation, as well as presented his work at numerous conferences around the world. In addition to practicing veterinary medicine, Dr. Arun conducts research, participates in inspections of other veterinary facilities, trains and provides surgical advice to other veterinarians. He is the lead supervisor on the Bear Denning Project, initiated by Wildlife SOS in 2014 to study ecology, denning patterns and reproductive physiology of wild sloth bears. He also heads up a research project to study the anatomy of captive and wild sloth bears in collaboration with the Karnataka Veterinary, Animal and Fisheries Sciences University. Dr. Arun is a member of the Indian Veterinary Council, the Indian Veterinary Association, the Association of Indian Zoo and Wildlife Veterinarians, and the Indian Society for Study of Animal Reproduction. He is also a volunteer member of the Wildlife Crime Control Bureau. Dr. Arun was awarded Best Emerging Wildlife Veterinarian at the International Conference on

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Wildlife Conservation, Health and Disease Management in 2010, and received an award for Outstanding Field Work in Wildlife Health at the National Congress on Wildlife Health and Forensics Convention of the Association of Indian Zoo and Wildlife Veterinarians.

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**Thomas Sharp, MS, Director of Conservation and Research for Wildlife SOS USA; IUCN Bear Specialist Group Sloth Bear Expert Team Member.** Thomas is currently the director of conservation and research for Wildlife SOS USA. For the last 10 years, he has been conducting research on sloth bear ecology and human-sloth bear conflict in India. He works closely with Wildlife SOS researchers in India, and has also conducted research in Bhutan and Lao on Asiatic black bears and sun bears. After attaining his master's degree, Thomas worked for the U.S. Fish & Wildlife Service conducting brown tree snake research in Guam and running a field station on the island of Rota, where he conducted research on the endangered Mariana crow as well as nesting sea turtles. Thomas then moved to Utah, working as a wildlife ecologist for a consulting company. This involved research on raptor nesting, endangered species, and other wildlife-focused projects across the western United States. His current interests are bear behavior (including attack behavior), sloth bear denning, and the biogeography of the three bear species in northeast India.

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**Lesley Small, Founder, Sumatran Sun Bear Team.** Lesley Small has over 35 years' experience working in various animal fields. She began her zoo keeping career in 1988. Wanting to combine veterinary nursing with zoo keeping, she started at Taronga Zoo at the Veterinary and Quarantine Centre. After working with varied taxa, she is currently a senior carnivore keeper with a focus on sun bears, and has worked with bears for over 20 years. Lesley has been involved with and visited most of the bear conservation and rescue centres in SE Asia. After visiting Sumatra in 2013, she discovered the need for a safe rescue centre for displaced sun bears there. Currently, there are no centres to house sun bears that have become involved in the illegal wildlife trade. Lesley is the founder of the Sumatran Sun Bear Team, and since 2017 has been getting a great team of like-minded people together who all want to help sun bears in Sumatra.

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**Annemarie Weegenaar, Director of Bears in Mind.**

Annemarie Weegenaar lived in Asia for 17 years where she mostly worked with Asiatic black bears and Malayan sun bears. In Indonesia she set up husbandry routines for sun bears at a newly established education centre. For 10 years she worked with Animals Asia who works on ending the bear bile trade. First as a Bear Manager at their Chengdu Bear Rescue Centre where she managed a bear team who provided care for Asiatic black bears and brown bears. Then in Vietnam where she established Animals Asia's new rescue centre as their Bear & Vet Team Director. At the sanctuary she headed up a bear & vet team of 50 staff, ensuring the best care was provided for 150 traumatised



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bears rescued from bile farms and the wildlife trade. She hand reared orphaned cubs, established their diets and trained staff on their proper care. She was also involved in behavioural husbandry training of the bears. Since 2016 Annemarie is the Director of Bears in Mind, a Dutch NGO who initiated the Bear Forest in the Netherlands, a sanctuary for abused bears. Annemarie holds a Bachelor degree in Animal Management. In 2015 Annemarie was involved in organising the Advancing Bear Care Workshop in Vietnam and she is on the board of directors of the Bear Care Group.

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