



5-6 October, 2022

WELCOME!

The Bear Care Group is excited to host the Advancing Bear Care 2022 virtual two-day conference. This year's conference theme is "*Beyond the Bear Necessities: Assessing Welfare in Bears*". We will explore ideas and methodologies to assess and improve welfare for bears beyond current accreditation and regulatory standards. Included in the program will be a series of speakers discussing topics including, but not limited to: bear enrichment, geriatric care, introductions and social groupings. Focus will be on conducting welfare assessments and utilizing the information to improve bear husbandry. The BCG is privileged to host a panel discussion with a team of international experts, which will discuss how individuals and institutions can address care and welfare for bears living in suboptimal environments or facilities.

I am personally thrilled that we are able to present a conference with this theme. When Else Poulsen and I founded the BCG, she concurrently engaged me in consulting with animal welfare organizations outside of accredited zoos. This opened my eyes to the suboptimal welfare that bears and other species experience in many roadside facilities, under private ownership, or in circuses or travelling performances. Following Else's example, I have championed to improve conditions and change regulations affecting bears (and all animals) around the world. My sincerest hope is that this year's delegates will acquire a greater understanding of the scope of these issues, and become empowered to action by recognizing that each of us can make a difference.

Thank you, and as always the Bear Care Group (and bears everywhere!) appreciates your support.

Sincerely,



Jay Pratte
President, The Bear Care Group

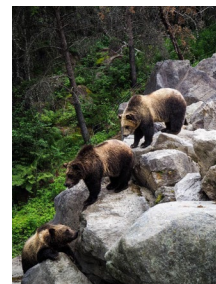


Photo Credit: Celine Chamiot Poncet

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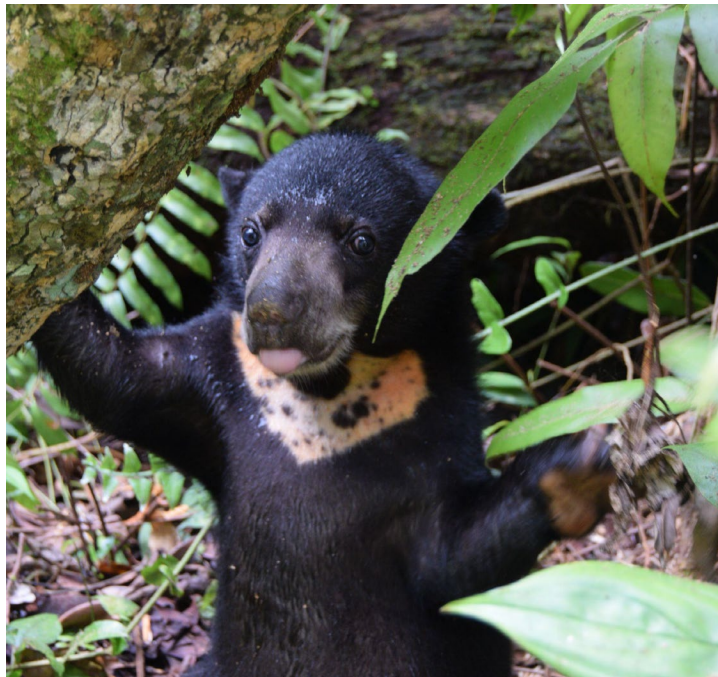
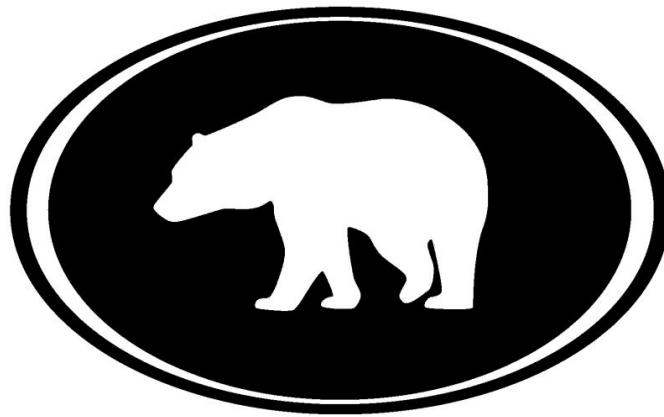


Photo Credit: Philip Stubley

BEAR CARE GROUP MISSION STATEMENT

The Bear Care Group fosters improvements in global bear welfare and conservation through communication, cooperation, and education among international bear care professionals. We accomplish this by i) advancing and sharing information on bear behavior, husbandry, enrichment, training, veterinary care, and other welfare-related topics, ii) organizing bear care conferences and workshops focused on educating and sharing information to improve global bear welfare, and iii) producing publications and resources to support bear care professionals in achieving excellence in bear husbandry and care.



Bear Care
GROUP

Find us on Facebook here: [The Bear Care Group Facebook Group](#)

Visit our website for other ways to help out and join the Bear Care Group: [The Bear Care Group](#)

BEAR CARE GROUP BOARD OF DIRECTORS

info@bearcaregroup.org

Jason Pratte - President

Mindy Babitz - Vice President/Treasurer

Angela Gibson - Social Media and Communications Officer

Heather Bacon - Director

Gary Lunsford - Director

Agnieszka Sergiel - Director

Laurie Vanderwal - Director



BEAR CARE GROUP FOUNDER: ELSE POULSEN



In 2007, a symposium for bear experts from around the world was hosted in Pomona, California. Nearly 100 individuals came together to present on bear husbandry and welfare related topics. It was clear from the engaged discussions and feedback that a need existed for a group dedicated to developing resources for bear caregivers. Creating a recognizable network to connect bear caregivers around the world, providing resources to improve their knowledge and skills, would consequently improve the lives of all bears. Else Poulsen was one of the original symposium hosts, and upon recognizing this need immediately laid plans to create the non-profit The Bear Care Group (BCG). The BCG was incorporated less than a year later by several original founders from various disciplines. This team began working on researching and providing resources, advice and guidance to bear caregivers worldwide. Else's vision was for the BCG to be a non-partisan entity, welcoming people from all disciplines (zoos, sanctuaries, rehab, field research...) into discussions, teaching and learning opportunities in an effort to increase understanding and care of all bears.

Since the inception, the BCG has maintained a listserv to discuss any bear-related topics, a Facebook group to encourage discussion and sharing of resources via social media, and our primary website. The BCG has also planned and hosted several international "Advancing Bear

Care” conferences in both North America and Europe, inviting regional and international delegates to attend, learn and share their insight on bear care methodologies. As the BCG network grew, collaborations with other organizations dedicated to bear welfare that Else and the Board members were familiar with developed, increasing our understanding of issues impacting bear species in different countries. This led to the BCG partnering with organizations like Animals Asia and Wildlife SOS to host workshops tailored to meet the needs of caregivers facing unique challenges, such as bile farming or trafficking. The BCG developed an evolving curriculum based on input from our partners and impacts on the bears to provide new insights and ideas on addressing issues affecting the animals and their caretakers. Over time, the BCG has been able to use the nonprofit monies generated by the conferences to fund these regional workshops, often hosted in low-middle income areas. Long-time sponsors and donors aid in providing grants and expertise.

From the beginning, Else worked with many groups and individuals dedicated to improving the lives of bears. The BCG continues to meet Else’s original vision, while evolving to remain apace of current science and our understanding of bear welfare. Our Board remains diverse, dedicated and excited to continue moving forward. The BCG encourages you to join our network and bring your knowledge and skills to the table. Else Poulsen was the original founder and force behind the Bear Care Group, a true hero for bears everywhere. Else has over forty publications to her name and a big part in the textbook *Stereotypic Animal Behavior – Fundamentals and Applications to Welfare*, 2nd Edition. Her first bear book *Smiling Bears – A Zookeeper Explores the Behavior and Emotional Life of Bears* was published in May 2009. Her second book, *Bärle’s Story - One Polar Bear’s Amazing Recovery from Life as a Circus Act* was released in Spring 2014.

A link to her publications can be found here <https://www.bearcaregroup.org/else-publications>
It remains up to all of us to continue her legacy. We welcome you to the Bear Care Group!

ABC ONLINE CONFERENCE 2022 OCTOBER 5th

12:00pm – 4:30pm Eastern Daylight Time

(5:00pm – 9:30pm British Summer Time)

(6:00pm – 10:30pm Central European Daylight Time)

(11:00pm – 3:30am Indochina Time)

TIME	ACTIVITY	SPEAKER (s)
12:00-12:05	HOST INTRODUCTION	
12:05-12:35	COMMUNAL LIVING FOR RESCUED BEARS: HOW SOCIAL COMPANIONSHIP CAN IMPROVE WELFARE	Sarah Van Herpt Animals Asia
12:35-12:45	Questions	
12:45-1:15	A VALIDATED BEAR WELFARE ASSESSMENT TOOL AND ITS APPLICABILITY TO GERIATRIC BEAR CARE	Heather Bacon Bear Care Group
1:15-1:25	Questions	
1:25-1:45	Break	
1:45-3:05	DELEGATE SUBMISSIONS	
1:45-2:00	USING CUSTOM ANIMAL WELFARE TEMPLATES TO TACKLE STEREOTYPIC PACING IN AMERICAN BLACK BEARS	Rachel Hughes Frank Buck Zoo
2:00-2:05	Questions	
2:05-2:20	THE CREATION AND INSTALLATION OF AN ADJUSTABLE HEAD CAGE FOR POLAR BEARS	Georgia Eckett Kansas City Zoo
2:20-2:25	Questions	
2:25-2:40	DESIGN AND APPLICATION OF A HUNTING DEVICE FOR POLAR BEARS	Mandy Fahy Maryland Zoo
2:40-2:45	Questions	
2:45-3:00	ASK THE RIGHT QUESTIONS AND THE BEARS WILL ANSWER	Joey Golden Maryland Zoo
3:00-3:05	Questions	
3:05-3:20	Break	
3:20-4:20	PANEL DISCUSSION	
	ADDRESSING WELFARE CONCERNS FOR BEARS IN SUBSTANDARD CONDITIONS	Jay Pratte Brittany Peet Emily McCormack Heather Bacon Bernd Nonnenmacher
4:20-4:30	End of Day 1 wrap up	

ABC ONLINE CONFERENCE 2022 OCTOBER 6th

12:00pm – 4:00pm Eastern Daylight Time

(5:00pm – 9:00pm British Summer Time)

(6:00pm – 10:00pm Central European Daylight Time)

(11:00pm – 3:00am Indochina Time)

TIME	ACTIVITY	SPEAKER (s)
12:00-12:05	HOST INTRODUCTION	
12:05-1:05	DELEGATE SUBMISSIONS	
12:05-12:20	REHABILITATION TECHNIQUES FOR RESCUED SUN BEARS THAT SHOW ANXIETY AND FEAR BEHAVIOURS	Hoàng Văn Chiến Nguyễn Quốc Việt Animals Asia
12:20-12:25	Questions	
12:25-12:40	AN EASY PILL TO SWALLOW: TRAINING AMERICAN BLACK BEARS TO VOLUNTARILY TAKE PILL CAPSULES	Rachel Hughes Frank Buck Zoo
12:40-12:45	Questions	
12:45-1:00	FLEXIBILITY IN SEASONAL BEAR MANAGEMENT	Brittany Combs Oakland Zoo
1:00-1:05	Questions	
1:05-1:20	Break	
1:20-1:50	GOAL-BASED ENRICHMENT PROGRAMMING: IMPROVING BEAR WELFARE THROUGH NATURAL HISTORY AND INDIVIDUAL ASSESSMENT	Kyle Banton-Jones Wild Enrichment
1:50-2:00	Questions	
2:00-2:30	ZOOMONITOR: A USER-FRIENDLY APP TO RECORD BEHAVIOR AND SPACE USE OF ANIMALS	Jason Wark Lincoln Park Zoo
2:30-2:40	Questions	
2:40-2:50	Break	
2:50-3:35	USING BASIC AND ADVANCED TRAINING TECHNIQUES TO ASSESS AND IMPROVE BEAR WELFARE	Jay Pratte Bear Care Group
3:35-3:50	Questions	
3:50-4:00	End of Day 2 wrap up	

LECTURE ABSTRACTS (in order of appearance)

COMMUNAL LIVING FOR RESCUED BEARS: HOW SOCIAL COMPANIONSHIP CAN IMPROVE WELFARE

Sarah Van Herpt

Across the world, bears are being rescued from dire situations; from war zones to the pet trade to roadside attractions, these bears invariably suffer both physical and psychological trauma. At Animals Asia's Vietnam Bear Rescue Centre (VBRC), we rescue bears from the illegal bile farming industry. To ensure we maximise the finite space available in our sanctuary for rescued bears, we integrate and house bears in large, mixed-sex social groups. While this bear management strategy is a necessity, we have found that integrating bears has a significant positive impact on their welfare and appears to support the healing of behavioural issues. To successfully create social groups, many factors must be considered, such as personality, rehabilitation stage, physical health, and psychological or behavioural health. Once suitable matches have been found, the integration process aims to set the bears up for success by being scheduled outside of hyperphagia and winter dormancy, ensuring satiety, providing a neutral space and slowly introducing different resources. This talk will discuss the process of creating social groups and the benefits that arise from such groups. Social companionship appears to offer socially housed bears an opportunity to learn from their conspecifics; from engaging in a fuller repertoire of natural behaviours, to learning to read the body language of others, cohabitating bears appear to support one another in their rehabilitation journey.

A VALIDATED BEAR WELFARE ASSESSMENT TOOL AND ITS APPLICABILITY TO GERIATRIC BEAR CARE

Heather Bacon

Animal welfare assessments are essential for the identification of welfare hazards and benchmarking of welfare improvements. Bears are commonly housed in zoos and welfare

problems are commonly reported especially as they age but until recently, no validated composite welfare assessment tool existed to assess captive bears. This study describes the development of such a tool for use across hibernating bear species. A draft tool was developed using indicators derived from the literature and a modified Delphi analysis with an international group of bear keepers. A total of 18 bear keepers from 12 zoos were recruited to trial the tool on 24 brown bears and American black bears. The participating keepers assessed their bears three times across a period of nine days. Intraclass correlation coefficients analysis was used to analyse inter-, intra-rater and item reliability. All showed good to excellent levels of agreement. The resulting bear welfare assessment published in 2021 is an important step in identifying and understanding problems in bear welfare and provides keepers with a practical and reliable tool for assessing bear welfare. This tool may be particularly useful for collecting lifetime data and assessing changes as bears age to better identify pathologies in these stoic species.

USING CUSTOM ANIMAL WELFARE TEMPLATES TO TACKLE STEREOTYPIC PACING IN AMERICAN BLACK BEARS

Rachel Hughes

Stereotypic behaviors, such as pacing in zoo-managed bears, are typically perceived as a welfare concern by zoo staff and visitors alike. These behaviors can be caused by any number of factors, making it difficult to identify and address the root cause of the behavior without data collection and assessment, and front-line animal care staff may not feel as though they have the time or resources to undertake such a task. To address stereotypic pacing in two American black bears (*Ursus americanus*), the Frank Buck Zoo took a holistic, welfare-based approach. They overhauled the bears' husbandry program to incorporate seasonality, adopted a randomized daily shifting pattern, began allowing the bears access to off-exhibit areas for privacy during operating hours, and more. To objectively assess the impact of each change on the bears' pacing, staff developed a custom welfare template to track these relationships. Over twenty data points are collected for each bear daily, tracking variables such as weather, construction work, visitation, food

motivation, shifting patterns, and interactions with conspecifics. Observation times are structured to fit into the staff's existing routine, and the data entry can be completed in less than five minutes. Over the past two years this fast, easy process has yielded a massive volume of information on each bear. The data provides clarity and helps inform individualized management decisions to reduce the occurrence of stereotypic pacing. In some cases, staff have even been surprised to find trends in the data that were contrary to what they had perceived during their observations. This demonstrates how the collection of welfare-focused data by front-line animal care staff is an accessible and meaningful tool.

THE CREATION AND INSTALLATION OF AN ADJUSTABLE HEAD CAGE FOR 1.1 POLAR BEARS

Georgia Eckett

In 2018 after Kansas City Zoo Animal Manager, Georgia Eckett, returned from a polar bear workshop in Churchill, Manitoba with Polar Bears International, she set out to create a head cage for the Kansas City Zoo's bear program. This head cage would function as a better way to address health issues in a geriatric bear and serve as a training and research tool for future polar bears. This medical device would create more opportunities to gain access to a polar bear's skeletal structure, identify dental issues, and provide access to difficult-to-reach areas like their ears. Since this head cage would be used for the current resident polar bear but also needed to be adaptable to future polar bears at Kansas City, an adjustable port needed to be created. After research and advisement from head vet, Dr. Kirk Suedmeyer, and maintenance staff, a brand-new head cage was designed. Made of aluminium, the cage had interchangeable clear plates and mesh walls to allow for different images and training needs. This head cage was constructed by a local welder and installed by Kansas City Zoo maintenance in the summer of 2019 when staff started training 30-year-old Berlin to take a voluntary radiograph of her skull. By October of 2019, Berlin became the first polar bear to successfully participate in a voluntary head radiograph at

the Kansas City Zoo. This project was a huge collaboration from many departments that will have a positive lasting impact for current and future bears at the Kansas City Zoo.

DESIGN AND APPLICATION OF A HUNTING DEVICE FOR POLAR BEARS

Mandy Fahy and Joey Golden

Atop the Arctic sea ice, wild polar bears utilize highly specialized techniques to ambush seals. One prominent hunting strategy is referred to as “still hunting” in which the bear remains motionless while waiting for a seal to come up for air. A device was designed to elicit this specialized hunting behavior from zoo-housed polar bears. Target behaviors included prolonged periods of waiting with minimal movement, amidst both successful and failed attempts to procure food items. The opportunity to grab a food item from the hunting device is contingent upon the bear’s behavior, just as a seal surfacing at a breathing hole is contingent upon not detecting a hunting bear. Once the seal or food item is within reach, the bear must respond very quickly for the hunt to be successful. The criteria for a successful hunt were increased throughout the process of training the bears to engage with the device, including the duration the bear waits, the degree of stillness of the bear, and the speed of the bear lunging. The device was initially manually operated by a keeper, monitoring behavior from a hide and making food items available accordingly. Once proof of concept was established, remote operation was set up, allowing the keeper to monitor and operate the device from an office area. Finally, the device was modified to operate off input from a motion sensor in an effort to decrease keeper time investment. This project presented an exciting opportunity to shape wild behavior in a zoo environment.

ASK THE RIGHT QUESTIONS AND THE BEARS WILL ANSWER

Joey Golden

The Maryland Zoo in Baltimore has housed two female grizzly bears since 2016. They were housed adjacent to the polar bears until the fall of 2021, when the polar bears were relocated to other zoos. With the departure of the polar bears resulting in additional space, the management options for the grizzly bears expanded, however an increase in aggression and stereotypic pacing

was noted as compared to previous years. A behavioral observation study was conducted to establish behavioral baselines for each of the bears and gain a better understanding of how different environmental stimuli influenced their behavior. The first step was to manage the bears in a way that had been historically successful, increasing the likelihood of the bears settling into a routine. Data showed that the daily behavior budget of each bear was consistent in this condition and pacing aligned heavily with keeper activity and engagement. Data were then collected throughout subsequent conditions using a variety of management practices. Different combinations of yard access, enrichment, and various management schedules were among the things investigated. The data showed that overall behavior was not heavily influenced by the changes in management, and that there were smaller changes and preferences seen when looking at each bear's enrichment preferences. It was found that enrichment could be offered in ways that were significantly less time consuming for keepers, while still achieving a comparable level of engagement from the bears. The additional time helped staff to accomplish more in a day, but also gave them the flexibility to collect more behavioral data to help them to better understand the bears. Over the course of a few months, thousands of data points were collected to help inform management decisions. Data collection continues as there are still many questions to answer including how behavior changes with the seasons, as the bears age, and how to minimize the frequency of pacing.

PANEL DISCUSSION:

ADDRESSING WELFARE CONCERNS FOR BEARS IN SUBSTANDARD CONDITIONS

Heather Bacon, Emily McCormack, Bernd Nonnenmacher, Brittany Peet and Jay Pratte

Join our panel discussion, attended by a team of international experts from varying disciplines, as we discuss how concerned individuals can address bear care and welfare in suboptimal environments or facilities. Professionals from reputable and accredited zoos and sanctuaries, as well as animal welfare advocacy organizations and regulatory agencies, will address chronic and documented concerns that adversely impact bears in pseudo-sanctuaries, roadside attractions

and travelling exhibitions. Assessment tools and action items will be presented, along with how concerned individuals and institutions can help.

REHABILITATION TECHNIQUES FOR RESCUED SUN BEARS THAT SHOW ANXIETY AND FEAR BEHAVIOURS

Hoàng Văn Chiến & Nguyễn Quốc Việt

The sun bear (*Helarctos malayanus*) is an extremely intelligent species that is very prone to experiencing anxiety and stress, and exhibiting stereotypic behaviours in human care when not provided with enough stimuli. At Animals Asia's Vietnam Bear Rescue Centre (VBRC), we use a range of husbandry techniques to provide our 13 sun bears with daily mental stimulation at appropriate levels. For sun bears who exhibit anxiety and fear behaviours, we have implemented a special care program to rehabilitate them, and improve their quality of life and overall welfare. This care and rehabilitation program holistically includes both medical and behavioural care. The program is continuously monitored and adjusted to the needs and context of each individual bear. The sun bears are provided with large spaces for activities such as climbing, foraging, playing, and enjoying climate variations (i.e. sun, shade) as they would in the wild. Bear carers also spend time daily building relationships with each bear to strengthen their trust in their carer. A special feature of rehabilitation at the rescue centre is that bears have the opportunity to socialize with others of their species and be integrated into social groups. These are all important factors in their rehabilitation. We have obtained positive results with this rehabilitation program as evidenced in our daily observation records by a reduction in anxiety and stereotypic behaviour. Nervous and anxious bears have become more confident: instead of just sitting in a corner or displaying stereotypic behaviours like they did when first rescued, they now go out into the enclosures, display natural behaviours, and have positive social interactions.

AN EASY PILL TO SWALLOW: TRAINING 1.2 AMERICAN BLACK BEARS TO VOLUNTARILY TAKE PILL CAPSULES

Rachel Hughes

When it became necessary to administer long-term, daily medication to a senior American black bear (*Ursus americanus*), the staff at the Frank Buck Zoo experienced a common problem; the bear quickly “caught on” that medication was hidden in her food and began to spit out her pills and refuse certain dietary items altogether. Trying to conceal the pills repeatedly in new and different foods quickly became a coercive, time-consuming, and not overly successful process, leaving everyone frustrated. Inspired by voluntary pill-swallowing behaviors that have been trained in elephants and some primate species, animal care staff successfully used positive reinforcement to train the senior bear to voluntarily swallow unflavored pill capsules. Staff no longer attempt to hide any medications from the bear, and the behavior allows for virtually any capsule or tablet to be given quickly, accurately, and with her enthusiastic participation. Using lessons learned while training the first bear, the animal care staff refined their shaping plan and trained the zoo’s two other bears to swallow pill capsules as well, a process that was accomplished in just a matter of weeks. The ease with which the bears mastered voluntary pill-swallowing demonstrates that this is an efficient and effective method for enabling bears to be active participants in their own care.

FLEXIBILITY IN TEMPERATE BEAR MANAGEMENT

Brittany Combs

Meeting the changing husbandry needs for temperate bear annual cycles can be challenging in a zoological setting. Temperate bears have extreme metabolic and behavioral seasonal changes that affect all aspects of their care. At the Oakland Zoo we have found that using a matrix system to prioritize tasks increases flexibility in the daily care of our American black bears (*Ursus americanus*) and brown bears (*Ursus arctos*). Psychological well-being and cleaning matrices are

created to help staff visualize expectations based on that day's available resources, while focusing those resources on activities that have the highest impact for the species during that season. Keepers adjust their daily management priorities and routines based on the number of staff present that day, while placing a larger emphasis on psychological well-being (i.e., training and enrichment) rather than cleaning. The matrices have also helped the team prioritize complex enrichment, the number and presentation of daily feedings, shifting considerations, and training during the extremes of hyperphagia through torpor while also providing necessary communication to the entire team. Matrices are reviewed weekly during team and supervisor meetings and are adjusted to keep the bears' current needs as the main focus for staff. Adjustments may also include modifications for animal injuries, abnormal behavioral changes, or geriatric care. By maintaining keeper investment and flexibility in daily management, we have seen improvement in the overall welfare of the bears, as well as the keeper staff.

GOAL-BASED ENRICHMENT PROGRAMMING: IMPROVING BEAR WELFARE THROUGH NATURAL HISTORY AND INDIVIDUAL ASSESSMENT

Kyle Banton-Jones

As the science around animal welfare continues to evolve, so do the methods we employ as animal care professionals to ensure optimal animal health and welfare. Bears are no exception to this; they are intelligent, curious and in need of constant mental and physical stimulation in order to thrive under human care. There are also many challenges associated with bear species such as destructiveness, being prone to stereotypic behaviour, and the need for caretakers to work protected contact. The goal of this presentation will be to teach attendees how to create goal-based behavioural husbandry programs that deal with these challenges by focusing on natural history and individual animal history while improving overall welfare. We hope by the end of this presentation, attendees will leave feeling confident that they could improve upon existing bear behavioural husbandry programs as well as develop and implement new programs.

ZOOMONITOR: A USER-FRIENDLY APP TO RECORD BEHAVIOR AND SPACE USE OF ANIMALS

Jason D. Wark, Katherine A. Cronin, Tony Niemann, and Megan R. Ross

Animal welfare is a top priority for many accredited organizations that care for animals, such as zoos, aquariums, sanctuaries, and laboratories. To evaluate animal welfare, we often rely on observational studies of animal behavior and draw insights from differences in behavior patterns between and within individuals. Long-term behavior monitoring may be particularly important for establishing baseline “normal” behavior patterns for individuals that can be used to detect significant behavior changes that may be indicative of a change in welfare. To support the need for a simple, user-friendly, accessible tool for monitoring the behavior of animals in human care, Lincoln Park Zoo, with development support from Zier Niemann Consulting, created the ZooMonitor app. With ZooMonitor, users can easily record the behavior of animals on tablet devices using standardized recording methods and plot the locations of animals on user-created enclosure images. These behavior data can then be analyzed using built-in reports or exported for manual data analysis. Since the release of the ZooMonitor app in 2016, it has become one of the leading digital tools for behavior monitoring in zoos or aquariums, with nearly 400 institutions registered around the world, including half of the organizations accredited by the Association of Zoos and Aquariums and a growing number of organizations in the European Association of Zoos and Aquaria. ZooMonitor is freely available to many accredited zoos, aquariums, and sanctuaries. We present a detailed description of the ZooMonitor app and share new features currently being created.

USING BASIC AND ADVANCED TRAINING TECHNIQUES TO ASSESS AND IMPROVE BEAR WELFARE

Jason Pratte

This presentation will provide an overview of commonly trained behaviors used to manage all species of bears under human care. The session will not focus on “how to train” these behaviors, but will instead discuss how varying examples of operant conditioning goals can be used to assess the individual welfare of an animal. Methodologies regarding use of training as a tool to improve welfare will be presented. Concepts will cover a variety of needs, including (but not limited to): body condition scoring (BCS), mobility and gait analysis, physical wellness exams, and medical procedures such as blood draws and ultrasounds.

PRESENTER BIOGRAPHIES (alphabetized by last name)

HEATHER BACON, OBE, is a veterinarian and the academic lead for the veterinary programme at the University of Central Lancashire. She has worked internationally on veterinary education and animal welfare projects for 15 years and was previously responsible for developing and teaching veterinary undergraduate and postgraduate courses at the University of Edinburgh in animal welfare, behaviour and veterinary ethics. Additionally, she works with many charities, veterinary and political organisations to develop veterinary educational initiatives around the world, with a focus on improving the welfare of captive and free-ranging wildlife, and free-roaming dogs. Heather also delivers UK zookeeper training courses in animal health, behaviour and welfare, and is a DEFRA appointed zoo inspector. Previously, she worked as the Veterinary Director at the Animals Asia Foundation, an NGO working to end the trade in bear bile across Asia. Heather graduated from the University of Bristol with a degree in Veterinary Medicine and Surgery, and from the University of Liverpool with a degree in Conservation medicine.

For details of projects and publications:

Address: University of Central Lancashire, Lancashire, UK

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KYLE BANTON-JONES is a Lead Keeper at The Toronto Zoo in Ontario, Canada, and has worked in the zoo field for almost 10 years. During this time, he became very passionate about behavioural husbandry. It was through this passion that he started Wild Enrichment in 2018, a company dedicated to helping improve the welfare of captive animals through the advancement of behavioural husbandry practices. Wild Enrichment provides educational content and consulting services to animal care facilities surrounding behavioural husbandry and animal welfare practices.

For details of projects and publications:

Address: Toronto Zoo, Ontario, Canada / wildenrichment.com

Email: kyle@wildenrichment.com

BRITTANY COMBS is a Senior Primary Animal Keeper at the Oakland Zoo in Oakland, California. She works with American black bears, brown bears, and mountain lions. She has been a keeper at the Oakland for four years but has had a passion for bears since she started working with them nine years ago. She received her bachelor's degree in Fisheries and Wildlife with a specialization in Wildlife Biology from Oregon State University.

For details of projects and publications:

Address: Oakland Zoo, Oakland, California, USA

Email: bcombs@oaklandzoo.org

GEORGIA ECKETT has spent the last 18 years in and around zoos as a volunteer, intern, paid staff and now a manager of an animal care team. She has specifically worked with eight polar bears over the last 10 years and has worked to create a robust training and husbandry program at the Kansas City Zoo. Georgia has co-authored a conservation grant to collaborate with Polar

Bears International as an Arctic Ambassador in Churchill, Manitoba and has made Kansas City Zoo an Arctic Ambassador Center focused on the conservation of wild polar bears. Her team has used exhibit modifications and scientific data collection to make many adaptations to better serve their geriatric polar bear and all other polar bears who have lived at the Kansas City Zoo.

For details of projects and publications:

Address: Kansas City Zoo, Kansas City, Missouri, USA

Email: georgiaeckett@fotzkc.org

MANDY FAHY is the Animal Behavior Specialist at the Maryland Zoo in Baltimore, where she works as part of a team to further training, enrichment, and behavioral monitoring programs across the zoo. Formerly a keeper, she has worked with a diverse array of species with a primary focus on bears and rhinos. Mandy enjoys combining creativity with the science of behavior change to develop novel ways to promote species-typical behaviors. She sits on the advisory board for Hoose2Habitat and leads enrichment building workshops across the country.

For details of projects and publications:

Address: Maryland Zoo in Baltimore, Baltimore, Maryland, USA

Email: mandy.fahy@marylandzoo.org

JOEY GOLDEN is the Curator of Animal Behavior Programs at the Maryland Zoo in Baltimore. Formerly the Animal Behavior Program Supervisor at the Buttonwood Park Zoo, he developed a collaborative welfare program with a local university where students collected behavioral data for each species to aid in welfare assessments and management decisions. Now at Maryland, he and his team use behavioral data to assess individual welfare while prototyping automated exhibit features to aid in creating a 24/7, engaging and unpredictable environment for each animal.

For details of projects and publications:

Address: Maryland Zoo in Baltimore, Baltimore, Maryland, USA

Email: joseph.golden@marylandzoo.org

HOÀNG VĂN CHIẾN is one of the bear team managers at Animals Asia's Vietnam Bear Rescue Centre. Animals Asia works to end the bile trade in Vietnam and China and has rescued 669 bears from the industry since the organisation was founded. Chien has over 14 years of theoretical knowledge and practical experience in bear husbandry and behaviour. As one of the local employees in Vietnam, Chien has participated in capacity building related to the care and welfare of wild animals in general and bears in particular. He has shared his knowledge with numerous rescue centres within Vietnam.

For details of projects and publications:

Address: Vietnam Bear Rescue Centre, Tam Dao, Vietnam

Email: choang@animalsasia.org

RACHEL HUGHES obtained her bachelor's in zoology at Washington State University, and master's in biology from Miami University. She has worked with American black and brown bears since 2012 in both research and zoological settings. She is currently a Senior Animal Care Staff member at the Frank Buck Zoo in Gainesville, Texas. In this role, she manages the care of over a dozen carnivore species ranging from cheetahs to alligators, and of course, the zoo's three resident American black bears.

For details of projects and publications:

Address: Frank Buck Zoo, Gainesville, Texas, USA

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EMILY McCORMACK is the Animal Curator at Turpentine Creek Wildlife Refuge (TCWR) in Eureka Springs, Arkansas. TCWR is a Global Federation of Animal Sanctuaries (GFAS) accredited non-profit sanctuary that provides a permanent home for an average of 100 big cats and bears

annually. Since 1992, TCWR has aided law enforcement and the court system in rescuing over 500 animals nationwide, providing them with lifelong care. TCWR is also a founding member of the Big Cat Sanctuary Alliance, and Emily serves as Vice Chair of their Steering Committee. She is also a member of the BEAR Alliance, comprised of colleagues who keep informed of bears in need of rescue in the U.S. Due to the enormous big cat crisis in the U.S., it became Emily's lifelong goal and passion to make a difference with the hope that one day there will not be a need for sanctuaries. She has worked and participated for over 23 years with national rescues, including recent federal confiscations with USDA and the Department of Justice. Emily has become a major force in improving the lives of these magnificent rescued cats and bears.

[For details of projects and publications:](#)

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NGUYỄN QUỐC VIỆT is one of the bear team managers at Animals Asia's Vietnam Bear Rescue Centre. Animals Asia works to end the bile trade in Vietnam and China and has rescued 669 bears from the industry since the organisation was founded. Viet has more than 10 years of experience in caring for and ensuring the welfare of bears. Viet is a skilled trainer in our Cooperative Care program and helps guide his colleagues. Viet has a solid knowledge of bear behaviour which has led to tangible improvements in the bears lives, for example by creating seasonal enrichment programs and leading programs to help nervous bears adjust to sanctuary life.

[For details of projects and publications:](#)

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BERND NONNENMACHER is currently the General Manager of the Alternative Bear Park Worbis, run by the Foundation for Bears. The Foundation for Bears advocates for and provides consultations on good welfare for bears, as well as organizes conferences and supports

behavioral research. The Foundation for Bears also maintains two parks where bears rescued from substandard conditions are rehabilitated and can live out their lives in natural outdoor enclosures. Originally having studied law, Bernd worked internationally as a business consultant for over 15 years. In 2015 he took on the role of project leader for the Alternative Wolf and Bear Park Black Forest until the end of 2019 when he became the managing director for Alternative Bear Park Worbis. Over the past few years, Bernd has rescued 12 bears, 12 wolves and 4 lynxes from substandard conditions and provided them with new lives and improved welfare in the Worbis and Black Forest bear parks.

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BRITTANY PEET is Deputy General Counsel for Captive Animal Law Enforcement for the PETA Foundation. Peet, an attorney, works on behalf of animals held captive by roadside zoos, travelling shows, and the film and television industries through legal and regulatory actions and public advocacy campaigns. She testified in Joe Exotic's federal trial, and was part of the legal team that secured the landmark legal ruling holding that big cat cub petting violates the federal Endangered Species Act. Peet also negotiates and coordinates wild and exotic animal rescues for PETA, and has overseen the rescues of hundreds of animals including 400 chinchillas, 76 bears, 75 big cats, and 20 chimpanzees.

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JASON (JAY) PRATTE has worked for three decades with game farms, sanctuaries, and accredited zoos, with species ranging from ant colonies to giant pandas, becoming internationally renowned for his animal behavior and welfare expertise. A founding board member and

President of the Bear Care Group, he earned his Masters degree in Zoo and Aquarium Leadership, has authored numerous publications, and is co-editor for the American Association of Zoo Keeper's "Training Tales" in the Animal Keeper's Forum. Jay is an adjunct professor, developing a course on animal welfare and human impact. An active animal welfare advocate, Jay is recognized as an expert witness in several US Federal court circuits, and aids numerous organizations globally in improving the lives of all species of animals.

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SARAH VAN HERPT is the Senior Bear Team Manager at Animals Asia's award-winning Vietnam Bear Rescue Centre. Animals Asia works to end the bear bile trade in Vietnam and China and has rescued more than 650 bears from the industry since it was established. Heading up the sanctuary bear care team, Sarah ensures the care and welfare of over 200 Asiatic black bears and Malayan sun bears. Sarah has innovated bear care at the sanctuary using her more than 12 years of theoretical and practical expertise in animal husbandry and behaviour. A native New Zealander, Sarah holds a BSc in Ecology and Zoology and MSc in Conservation Biology from Massey University and a certificate in veterinary nursing from Otago Polytechnic.

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JASON D. WARK, PhD, is an Animal Welfare Scientist at Lincoln Park Zoo in Chicago, IL. Jason is part of Lincoln Park Zoo's Animal Welfare Science Program, a program through which scientists and Animal Care staff work together to evaluate and enhance the well-being of animals in zoos and promote positive animal welfare. Jason oversees the ongoing volunteer-based behavioral monitoring program at Lincoln Park Zoo and works alongside Animal Care staff to translate data

into actionable insights to help animals thrive in the zoo environment. Jason also manages the development of the ZooMonitor app, a web-based tool to measure behavior and infer the welfare of animals. This application was made available to zoos, aquariums, sanctuaries, and others to provide the community with an easy-to-use electronic means of recording behavior. Jason regularly provides guidance and training on how other institutions can use ZooMonitor and behavior data to advance welfare.

[For details of projects and publications:](#)

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