

STATUS OF BEAR WELFARE



at Chief Saunooke Bear Park,
Cherokee Bear Zoo, and
Santa's Land, in Cherokee,
North Carolina

TABLE OF CONTENTS

INTRODUCTION 6

Author Biographies..... 6

 Rob Laidlaw 6

 Lydia Lefebvre 6

 Else Poulsen 6

 Dr. Debi Zimmerman..... 7

How Modern Zoos Care for Bears 7

 Bear Species Discussed in This Report 8

 What Bears Expect 8

 Behavior-Based Bear Husbandry 8

 Daily Routines 9

 Seasonal Routines..... 11

DEFICIENCY REPORT 15

Overview 15

 Chief Saunooke Bear Park 16

 Cherokee Bear Zoo..... 16

 Santa’s Land 16

Enclosure Design 17

 Lack of Space 17

 Lack of Privacy..... 17

 Pits (Chief Saunooke Bear Park and Cherokee Bear Zoo) 18

 Cages (Santa’s Land) 20

Lack of Protection From Sunlight and Inclement Weather 20

Inadequate Drainage 22

Concrete..... 22

Absence of Essential Environmental Enrichment 23

Behavioral Stress 24

Improper Diet..... 25

Uncontrolled Public Feeding 27

Daily Husbandry 28

Seasonal Husbandry 28

Chief Saunooke Bear Park 29

Cherokee Bear Zoo..... 29

Santa’s Land 29

VETERINARY CARE 30

Concrete and Related Physical Trauma 30

Feet 31

Footpads 31

Claws 32

Osteoarthritis..... 32

Obesity, Poor Muscle Tone, and Nutritional Concerns..... 32

Chronic Pain: Neck, Back, and Shoulders 33

Dental Problems..... 33

Reproductive Stress..... 35

Parasites 35

Skin Conditions 35

ANALYSIS OF COMPLIANCE WITH THE ANIMAL WELFARE ACT 36

RECOMMENDATIONS 41

PHOTOS 42

REFERENCES 62

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INTRODUCTION

On Sunday, October 25, 2009, four expert investigators—Rob Laidlaw, Lydia Lefebvre, Else Poulsen, and Debi Zimmermann—were invited by PETA to visit Chief Saunooke Bear Park (CSBP), Cherokee Bear Zoo (CBZ), and Santa’s Land (SL) in the Great Smoky Mountains of Cherokee, North Carolina. The parameters of each facility as they relate to the bears’ husbandry needs were inspected, including daily and seasonal husbandry, enclosure design, environmental enrichment programming, diet, and veterinary care.

AUTHOR BIOGRAPHIES

Rob Laidlaw

Rob Laidlaw is a chartered biologist who has been involved in captive wildlife welfare issues for the past 25 years, including the assessment of captive wild animal housing and husbandry. During that time, Laidlaw has reviewed and/or visited approximately 1,000 zoos and captive wildlife facilities around the world. A portion of his work has involved reviewing and assessing the conditions in which bears are kept in captivity. Laidlaw is the founder and executive director of Zoocheck Canada, a national wildlife protection charity, established in Toronto, Canada, in 1984 and has served as project manager and technical advisor for the World Society for the Protection of Animals.

Lydia Lefebvre

Lydia Lefebvre grew up living and working around wildlife in northern Ontario and obtained her early knowledge of wildlife and bears by working in forests and remote locations. Her career in the fields of natural resources and environmental consulting expanded to wildlife fieldwork and led her to become a zookeeper charged with the care of bears. As a zookeeper in Ontario, she learned modern husbandry methods and environmental enrichment programming. Lefebvre has improved the lives of bears in captivity by observing and interpreting bear behavior in order to determine the animals’ needs. She has also trained bears through the exclusive use of positive training methods in order to aid in the monitoring of their health and veterinary care. She has worked for years as a volunteer and sometimes as a board member with organizations such as the Alliston & District Humane Society, the Northern Ontario Animal Welfare Society, and Zoocheck Canada. As a consultant, Lefebvre has evaluated and commented on facilities and enclosures holding native and exotic species. She has completed two degrees in parks and forest recreation and ecotourism management and is currently pursuing a degree in science and animal behavior at the University of Western Ontario.

Else Poulsen

Else Poulsen began her career in animal behavior in the early 1980s working as a field biologist in Alberta’s energy industry. She later became a zookeeper at zoos accredited by the U.S.-based Association of Zoos and Aquariums (AZA) and the Canadian Association of Zoos and Aquariums. Poulsen became a specialist in captive bear behavior, husbandry, and management. She found it difficult to accept that the bears in her care displayed abnormal behavior such as pacing, so she set out to better the animals’ lives. This led her to research captive bear problems, publish her

findings, and advocate for change. After 18 years at the Calgary Zoo, she left to work at a major U.S. zoo and then several Ontario facilities specializing in bears. As the founding consultant for Behavioral & Environmental Solutions, she has provided zoos, sanctuaries, and animal welfare groups around the world with expert assistance and advice about modernizing bear husbandry methods, environmental-enrichment programming, and enclosure-design issues. Poulsen has more than 40 publications to her name, including peer-reviewed journals, technical journals, articles for the media, and a section in the textbook *Stereotypic Animal Behavior: Fundamentals and Applications to Welfare, Second Edition*. Her first bear behavior book, titled *Smiling Bears: A Zookeeper Explores the Behavior and Emotional Life of Bears*, was released in May 2009. She continues to lecture on bear behavior, modern bear care, and animal welfare issues to audiences ranging from university students to First Nations band council members in northern Canada.

Dr. Debi Zimmerman

Debi Zimmermann earned a doctorate of veterinary medicine from the University of Saskatchewan's Western College of Veterinary Medicine in 1988. She also holds a degree in biological sciences with a specialization in zoology from University of Alberta and is a graduate of the Animal Health Technology Program at the Northern Alberta Institute of Technology. Her experience with wildlife includes rotations in wildlife medicine and exotic animal medicine, work on a peregrine falcon–breeding project, and a course in wildlife immobilization. Dr. Zimmermann has visited zoos on many continents and spent weeks observing and photographing wild animals in several national parks in Canada, the U.S., Africa, Cambodia, and Thailand. Dr. Zimmermann owned and operated a companion animal veterinary practice for 14 years and was one of the few veterinarians in Alberta who accepted native and non-native wildlife patients. Her practice had a strong focus in nutrition, chronic pain management, and quality-of-life issues. Global Television named Dr. Zimmermann Woman of Vision for January 2002. She is a member of the Canadian Veterinary Medical Association, the Alberta Veterinary Medical Association, the Edmonton Association of Small Animal Veterinarians, the International Veterinary Academy of Pain Management, and Veterinarians Without Borders.

HOW MODERN ZOOS CARE FOR BEARS

Historically, captive bears have been held in barren, utilitarian cages or concrete pits, fed and cleaned once a day, and then left alone, often without shelter from the weather or opportunities to seek privacy from the public or their cagemates. In these sensory-deprived environments, bears have suffered significant stress responses such as stereotypic pacing patterns, head-rolling, self mutilation, fur loss, and apathy.

In the past three decades, wildlife biologists have learned a great deal about wild bear behavior, social structure, and habitat needs, and professional facilities have incorporated this information into captive bear husbandry in order to maintain mentally and physically healthy bears. Behavior-based bear husbandry dictates that bears are to be cared for in ways that are meaningful to the bears' sensibilities.

Bear Species Discussed in This Report

This report focuses on the needs of bear species found in Cherokee's zoos, specifically American black bears, Asiatic black bears, grizzly bears, and likely Syrian brown bears. According to the AZA's Bear Taxon Advisory Group:

- American black bears (*Ursus americanus*) are found in 32 U.S. states, all provinces and territories of Canada with the exception of Prince Edward Island, and northern Mexico. They prefer forested areas and choose habitats that keep them away from contact with brown bears, a much larger competitor species.¹
- Asiatic black bears (*Ursus thibetanus*) are native to Southern Asia and parts of Russia and prefer heavily forested areas, particularly in hills, mountains, and tropical forests below alpine elevations.²
- Grizzly bears (*Ursus arctos horribilis*) and Syrian brown bears (*Ursus arctos syriacus*) are sub-species of brown bears. Grizzly bears are found in western Canada, Alaska, Wyoming, Montana, Idaho, and Washington. Syrian brown bears are native to the Middle East. Brown bears choose habitats including forests, tundra, and lower alpine mountain regions.³

What Bears Expect

Every modern-day species uniquely evolved over millennia to be perfectly adapted to a very specific environment. Like a human, every bear is born with a set of genetic expectations to live a certain way. Bears of the same species share certain genetic expectations. Thus all American black bears expect to live in the black bear habitat, expressing behavior that is normal to a black bear, and all grizzly bears expect to live in the grizzly bear habitat, expressing behavior that is normal to grizzly bears. No bear of any species ever expects to live in an environment as alien, hostile, and austere as a cement pit or is genetically equipped to do so successfully.

Individual bears differ from each other and have their own personal history of experiences from which they learn lessons. The environment in which a bear lives also helps determine his or her responses. Genetic programming, personal history, and current circumstances make up the bear's personality and shape his or her ability to cope with adverse conditions.

Experiences in a bear's formative years are critical to the development of his or her personality. A bear who is taken away from his or her mother, raised by humans, and then relegated to a concrete pit experiences circumstances far removed from those he or she was born to expect and can suffer severe mental, physical, and emotional disturbances as a result.

Behavior-Based Bear Husbandry

Wild bears need large tracts of undisturbed, nourishing land in order to survive. In captivity, a bear needs a large, natural, wooded enclosure—a minimum of one acre for every two to three adults—including a pool that is a minimum of 900 square feet in area and at least 4 feet deep.

The daily and seasonal routines of black bears and brown bears are similar, so the basic husbandry routine can be similar as well. Black bears and brown bears are highly vegetarian, yet captive facilities often make the mistake of feeding them commercially prepared dog food, which

is too high in protein. It is currently thought that high-protein diets may be the cause of the high incidence of cancer deaths in captive bears. In the wild, black bears can be up to 95 percent vegetarian, and brown bears can be slightly less vegetarian as they add elk, moose, and small mammals to their diets in the summer and fall.

Daily Routines

A bear in the wild or in captivity will set up a natural daily routine if given the materials needed to do so. Below is a chart of the natural activities and the enclosure and enrichment parameters required to meet those needs.

Time	Behavior	Enclosure/Enrichment Requirements
Sunrise	Bears wake	Bears need constant indoor/outdoor access except when keepers are cleaning and enriching the enclosure. Caregivers must have the ability to recall the bears in a low-stress manner, using relationship, positive-reinforcement training, and food rewards for shifting.
Sunrise	Bears check for cagemates	The bears must live in appropriate social structures. The grouping with the least amount of conflict is two females and one male.
Shortly after sunrise	Bears wash with water or roll in substrate	Pools, woodchips, soil, growing grasses, etc., are required in significant amounts.
Early morning, often before the caregiver arrives for work	Bears search for food	This is a critical time for a bear. If the animal remains hungry in the morning before the caregiver arrives, he or she will begin to express aberrant behavior such as pacing. The caregiver must therefore feed the bear at sunrise or leave the bear with enrichment objects full of foods the night before, so that the bear can investigate for leftovers in the morning until the caregiver arrives.
Early morning to midmorning	Caregiver cleans outside and indoor areas	The caregiver must have the ability to shift the bears from point A to point B in a low-stress manner using relationship,

Time	Behavior	Enclosure/Enrichment Requirements
		<p>training, and food rewards for shifting.</p> <p>The caregiver should place new bedding materials and enrichment items.</p> <p>Enrichment types should include scent, sound, problem-solving, tactile, novelty, training, and bonding sessions.</p>
<p>Midmorning to early afternoon</p>	<p>Bears build or clean their nests</p>	<p>Bear must have a choice of day-nesting sites. There should be trees, climbing structures, and dens for cubs. There should be nests and dens for adults.</p> <p>Nest-building materials should include grasses, leaves, soft branches, straw, hay, and wood wool, all in substantial amounts to significantly cushion and insulate the bear, and these should be available 24/7.</p>
<p>Early afternoon to afternoon</p>	<p>Caregiver places enrichment</p>	<p>The caregiver must have ability to shift the bears from point A to point B in a low-stress manner using relationship, training, and food rewards for shifting.</p> <p>Enrichment types should include scent, sound, problem-solving, tactile, novelty, training, and bonding sessions.</p>
<p>Early afternoon to afternoon</p>	<p>Bears rest in the day bed</p>	<p>The enclosure and substrate must offer the bears a choice of nesting site, privacy, quiet, shade, and indoor and outdoor access.</p>
<p>Afternoon to evening</p>	<p>Bears search for food</p>	<p>Enrichment types should include scent, sound, problem-solving, tactile, novelty, training, and bonding sessions.</p> <p>The enrichment options should offer the bears mental challenges such as puzzle feeders as well as some physical exercise such as bear jungle gyms.</p>

Time	Behavior	Enclosure/Enrichment Requirements
Evening	Bears begin to show an interest in bedding down	Bedding-down areas for nightfall must offer the bears privacy, choice, bedding, and the option to sleep indoors or outdoors.
Night	Bears rest	Exception: On occasion, the bears will become nocturnally active, usually for foraging.

Seasonal Routines

American black bears in the southeastern U.S. den up for the winter, as do brown bears in countries with warm climates. Bears become biochemically challenged and short-tempered if they are kept from denning. As indicated in the following references, the captive bears in Cherokee should be provided with the opportunity to den up during the winter:

Biological Research Papers: Black Bear Denning in the Smoky Mountains and the Southeastern U.S.

Elina P. Garrison, “Reproductive Ecology, Cub Survival, and Denning Ecology of the **Florida** Black Bear,” master’s thesis, University of Florida, 2004.

Keith G. Johnson and Michael R. Pelton, “Environmental Relationships and the Denning Period of Black Bears in **Tennessee**,” *Journal of Mammalogy* 61.4 (Nov. 1980): 653-60.

Mark D. Jones, “Hibernation Means Different Things to Different Animals,” **North Carolina** Wildlife Resources Commission, April 1999
 <www.ncwildlife.org/wildlife_species_con/wsc_black_bear_hibernate.htm>.

Melissa J. Reynolds-Hogland, *et al.*, “Selection of Den Sites by Black Bears in the **Southern Appalachians**,” *Journal of Mammalogy* 88.4 (2007): 1062-73.

Steven G. Seibert, “Winter Movements and Denning of Black Bears in **Northwest Florida**,” *Proceedings of the Annual Conference of Southeastern Fish and Wildlife Agencies* 49 (1995): 283-291.

Keith M. Weaver and Michael R. Pelton, “Denning Ecology of Black Bears in the Tensas River Basin of **Louisiana**,” International Association of Bear Research and Management, *Bears: Their Biology and Management* 9.1 (1994): 427-33.

Biological Research Papers: Brown Bear Denning in Warm Climate Countries, Spain, and the Gobi Desert

Peter J. Balint and Jennifer A. Steinberg, “Conservation Case Study of the **Gobi** Bear,” in D. Badarch, R.A. Zilinskas, and P.J. Balint, eds. *Mongolia Today: Science, Culture, Environment, and Development* (London: RoutledgeCurzon, 2003) 238-57.

Guillermo Polermo, *et al.*, “Ecology and Behavior of Three Wild Orphaned Brown Bear Cubs in **Spain**,” International Association of Bear Research and Management, *Bears: Their Biology and Management* 9.2 (1997): 85-90.

Season/Event	Enclosure/Enrichment Requirements
<p>Winter Diet</p>	<p>It is imperative to mimic a natural diet before and during denning.</p> <p>Because humans have no idea how much food in fall is enough to get a bear through the winter—and those needs change with personal and environmental factors—captive bears need to be offered some food and water during denning.</p> <p>Reduce the amount and types of foods, offering primarily chow during denning. This way, the bear is sustained if he or she didn’t get enough calories in the summer and fall but will not feel the need to get up to eat simply because treats are offered.</p> <p>Denning bears have died in the captive environment because food and water were completely removed. Never artificially reduce food amounts; instead, work off the bears’ needs—if the bears are still hungry and eating, then feed them. Once they reduce their own intake and begin showing signs of denning, reduce foods according to behavior.</p> <p>Treats and enrichment are not required or encouraged during denning season. Treats and activities are not available in nature at this time, and bears will get up for them, but that is not the objective.</p>
<p>Winter Enrichment</p> <hr/> <p>Spring Diet</p>	<hr/> <p>In the wild, bears emerge from their dens in the spring when the weather begins to warm and the snow and ice are melting. At this time, there is still no new food available, so they root around for overwintered food sources such as old berries, fruits, tender shoots, and branches.</p> <p>Food is still scarce in the spring, so wild bears’ caloric intake is not high. When they come out of denning, therefore, they still have to rely on their food stores to get through the spring. The captive bear must not come out of winter denning bone thin; the animal must still have fat reserves.</p> <p>Zoos often make the mistake of immediately offering their newly risen bears a full diet with lots of calories. Actually, this is only appropriate</p> <hr/>

Season/Event	Enclosure/Enrichment Requirements
Spring Enrichment	<p>during the late summer and fall. It is in the spring that zoo bears can become fat, because they are given additional foods to store on top of the previous fall's fat reserves.</p> <p>The captive black and brown bear diet should be largely vegetarian at this time of year.</p> <p>In the spring, bears need a great deal of enrichment. This includes scattering the diet around the enclosure; placing food into puzzle feeders; presenting it in lunch-size boxes and bags mixed with straw so that the bear has to sort through the straw for food; providing rotting logs full of bugs; providing fresh, thin willow branches with new buds; providing scent trails using pre-used bedding from hoof stock; and providing a choice of nesting sites.</p>
Summer Diet	<p>As summer progresses, the caregiver should be increasing the total amount of food to mimic the abundance of foods available in nature. At midsummer, therefore, fruits and berries should become abundant in the captive animal's diet. The caregiver should increase the amount of nuts and berries for black bears and the amount of meat proteins for brown bears.</p> <p>Willow and other species of tree browse such as sugar maple as well as grasses should always make up a part of the bears' diet.</p>
Summer Enrichment	<p>In the summer, bears need a great deal of enrichment. This includes scattering the diet around the enclosure; placing food into puzzle feeders; presenting it in lunch-size boxes and bags mixed with straw so that the bear has to sort through the straw for food; providing rotting logs full of bugs; providing fresh, thin willow branches with new buds; providing scent trails using pre-used bedding from hoof stock; and providing a choice of nesting sites.</p>
Fall Diet	<p>Both black bears and brown bears will be voracious eaters at this time of year as they put on weight to get them through denning in the coming winter and wandering in the ensuing spring.</p> <p>Berries, fruits, and nuts are a huge part of the American black bear's diet, and berries, fruits, tubers, and meat proteins make up much of the grizzly bear's diet.</p>
Fall Enrichment	<p>In the fall, bears need a great deal of enrichment. This includes scattering the diet around the enclosure; placing food into puzzle feeders; presenting it in lunch-size boxes and bags mixed with straw so that the bear has to</p>

Season/Event	Enclosure/Enrichment Requirements
	<p>sort through the straw for food; providing rotting logs full of bugs; providing fresh, thin willow branches with new buds; providing scent trails using pre-used bedding from hoof stock; and providing a choice of nesting sites.</p> <p>Winter denning sites should be available, either by giving the bears the ability to dig dens in the enclosure or giving them access to indoor winter-denning bedrooms. They must also be provided with enough fresh bedding material to make up their winter nests. (On average, 1.5 bales of straw per bear is suitable for winter denning.)</p>

DEFICIENCY REPORT

OVERVIEW

We find that, in our decades of experience working with captive bears and/or examining zoos around the world, the enclosures for captive bears at Cherokee's Chief Saunooke Bear Park (CSBP), Cherokee Bear Zoo (CBZ), and Santa's Land (SL) ranked among the worst we have encountered.

The facilities failed to provide for the basic, essential needs of bears in captivity, including proper enclosure design, appropriate daily husbandry, seasonal husbandry, environmental enrichment, and veterinary care. There were no enrichment, dietary, or husbandry changes to mitigate the inhumane conditions of the concrete pit enclosure design or the undersize cages.

When considering what is spatially appropriate for wild animals in captivity, three questions should be asked. First, how much space do animals need in order to express natural movement and behavior? Clearly, at the Cherokee zoos, the answer is far more than what has been provided. Second, how much space do animals need to feel safe and secure? Again, the answer at the three Cherokee facilities is more than has been provided. Third, what are the consequences of not providing enough space? The negative consequences of providing too little space are clear when one looks at the activity budgets and behavior of the Cherokee zoo bears.

The key problems in all the enclosures were the following:

- simplistic, inappropriate enclosure design
- lack of space
- hard substrates (concrete, hardpan)
- no functional structural enhancements or furnishings
- no tactile, sensory, or cognitive enrichment
- poor use of vertical space
- inadequate shelter
- no privacy opportunities
- intraspecific competition/aggression
- inappropriately positioned visitor viewing stations
- uncontrolled public feeding

In all likelihood, the condition of the bear housings at the three facilities is a result of one or a combination of the following factors:

- The designer had no knowledge of the biology, behavior, ecology, and lifestyles of bears.
- The present structures are inexpensive to construct.
- They are easy to clean and require little maintenance.
- They provide clear and unobstructed animal viewing at any time.

No effort had been made to utilize the vertical dimension in any of the various enclosures. The introduction of climbing apparatus, platforms, log piles, branches, and hammocks would greatly

increase opportunities for movement and substantially increase the space available to the animals.

There was no evidence of any kind of tactile, sensory, or cognitive enrichment. At all facilities, the bears had little to do except walk a few paces from one side of their living space to the other, beg for treats from visitors or sit, lie, or sleep on the concrete floor.

None of the facilities provided the bears with any substrate materials to manipulate, dig in, or to use in the construction of day beds, nests, etc. Wood chips, earth, leaf litter, and straw can be used to cover hard surfaces. None was available.

Chief Saunooke Bear Park

This facility housed a total of approximately 14 American and Asiatic black bears, grizzly bears, and likely Syrian brown bears in pits. The bear pits contained shallow, low-walled concrete pools, some with a three-tiered step structure at one end that had water falling from the top down each step into a pool below. The bears could presumably sit on the top of these structures (and one American black bear was observed doing so), but the steps of all but one were wet and probably not attractive as a perching or resting area as a result. Furnishings were old, sparse, and nonfunctional. The few tree trunks and branches in the enclosures were hard, smooth, and stripped of bark. Objects were sparse, consisting of a few hanging tires and a boomer ball in the brown bear and Asiatic black bear enclosures and a few immovable stones embedded in the concrete floor, presumably decorative in function. No other enrichment objects were observed.

The facility provided no special attention to two bears cubs who were housed there. Despite the fact that bear cubs require especially rich and complex living environments for their developing minds and bodies, the bear cubs' enclosure was as barren as the adult exhibits. Both cubs exhibited entrenched pacing stereotypies; one cub was frantic in his pacing and head-swinging.

Cherokee Bear Zoo

This facility housed a total of about 10 American black bears and grizzly bears in pits. High cinder block walls confined the bears on smooth concrete floors. The pits each contained a low-walled concrete pool and one or two thin vertical tree trunks. No other structural enhancements or furnishings were present. The only objects present were a single old rubber tire in each enclosure and a short section of old tree branch on the floor of one of the grizzly bear enclosures.

Santa's Land

This facility housed two American black bear cubs in an enclosure that was fenced in by an approximately 8-foot-high chain-link fence on a hardpan dirt floor (hard, densely packed soil) as well as two adult black bears in an extremely small cage with a concrete floor. An old hollow log and a steel drum situated beneath a wooden canopy structure, a few stumps denuded of bark, and a shallow concrete pool were the only furnishings provided for the American black bear cubs in the fenced enclosure. No other furnishings or objects were present, and no complex enrichment was provided for the cubs' developing minds and bodies. The adult black bear cage contained a few stumps, several large rocks embedded in the concrete floor, and a hanging branch, but was otherwise barren.

An underlying problem with the housing of bears at SL is the facility's bear management practice. At the beginning of every tourist season, the facility acquires a set of black bear cubs from a breeder and somehow disposes of the pair of adult bears to make room for the new ones. This practice supports the indiscriminate breeding and supply of black bears for substandard roadside zoos of which there are dozens in the American Southeast. Bears are bought and sold like commodities and have no semblance of normal bear life. Bears in this situation suffer enormously at the hands of uncaring and unskilled people.

ENCLOSURE DESIGN

Lack of Space

The bear enclosures in all three facilities were grossly undersized and entirely failed to satisfy the spatial requirements of the bears they contained. All bears require large, environmentally complex, natural spaces that allow them to express a wide range of normal movement and behavior, including normal wild food-gathering behavior (called "appetitive behavior"). Compressed spaces that severely hinder or eliminate species-typical behavior inevitably result in poor physical health, symptoms of which include but are not limited to decreased muscle mass, depressed cardiovascular health, foot and skeletal issues, and obesity. In addition, the animals suffer from diminished psychological well-being, symptoms of which include but are not limited to frustration, anxiety, and boredom, evidenced by prolonged periods of inactivity, stereotypic behavior, and/or other abnormal behavior.

When compared to the minimum home ranges of bears in the wild, the living spaces of the bears at the Cherokee zoos were orders of magnitude smaller. For example, at CBZ, two brown bears were housed in a pit-style enclosure that measured approximately 14 feet (4.26 meters) by 20 feet (6.09 meters)—a remarkably tiny 280 square feet (25.94 square meters). This enclosure was hardly adequate as a temporary holding facility, let alone permanent housing. Two adjacent enclosures at this facility, one housing another two brown bears and the third holding two American black bears, were approximately 560 square feet (51.88 square meters), while the remaining enclosure housing four American black bears was approximately 54 feet (16.45 meters) by 20 feet (6.09 meters), or 1080 square feet (100.18 square meters). In the wild, home range sizes for bears can vary from dozens of square miles up to thousands of square miles.

The pits at CSBP varied in size from being marginally larger than those at the CBZ to marginally smaller. There were two enclosures for bears at SL, one housing two American black bear cubs roughly estimated to be about 600 to 700 square feet on a hardpan dirt floor, and a second housing two adult black bears in an extremely small exhibit that was approximately 100 square feet with a concrete floor, canopied chain-link fencing, and a very small den of approximately 36 square feet. Both cages were grossly undersized, with the adult bear enclosure ranking as the smallest encountered in the three facilities.

Lack of Privacy

The crowded living conditions and poorly designed enclosures in Cherokee did not allow the bears to express the most basic, normal behaviors such as removing oneself from the group, removing oneself from the public eye, and showing adequate respect for another bear's personal space (also thought of as "fight or flight distance"). Instead of being able to naturally practice their

normally dispersed social nature, they were put in a situation in which they competed for limited resources such as shade, dry areas, or preferred feeding areas where they could look for food from the public.

Bears are not solitary animals, as previously thought. Bears are independent animals who are actually highly social in nature and live in what can be thought of as dispersed social groups, meaning that they are aware that they are sharing their habitat with other bears and leave information for other bears about food resources and their own movements on scratching trees, scent trails, etc. Female bears are genetically programmed to expect to live with other bears for the vast majority of their lives. Males are programmed to meet and greet other bears throughout the year, not just during breeding season.

Bears in captivity must have adequate space and a proper enclosure design to allow them to escape competition and confrontation and be able to find privacy.

Pits (Chief Saunooke Bear Park and Cherokee Bear Zoo)

Although the bears in the pits at CSBP and CBZ were alive, their quality of life was grossly substandard. The design of the small, barren concrete pits was as old as ancient Rome and became very popular in North America in the 1930s, when very little was known about bears except that they were sometimes dangerous to humans. The pits were not built to accommodate the bears' natural behavior—only to accommodate human safety and to provide human entertainment.

The bears were essentially warehoused as exhibit pieces with no ability to engage in normal activity, no choice over their activities, and no control over what they could do. In other words, they could not make a meaningful contribution to the quality of their own lives.

Sensory Deprivation

Confinement in a pit means living in a sensory-deprived world with almost no visual stimulation, little olfactory stimulation, and limited auditory stimulation.

Smell is a bear's primary sense. The structure of the concrete pit did not allow wind to eddy into it bringing airborne information about the bear's environment. Sight is a human's primary sense. Depriving a bear of olfactory experiences is akin to blindfolding a human.

Sensory deprivation is widely recognized as the deliberate reduction or removal of stimuli from one or more of the senses and can result in anxiety or depression in humans. Highly intelligent and sentient beings, whether humans, bears, or members of another species, can suffer greatly from loss of freedom, lack of sensory stimulation, lack of privacy, and close confinement.

Excessive Noise

The design of the pits coupled with the lack of natural elements left these bears surrounded by acoustically reflective surfaces and subjected them to a constant din caused by people shouting, children squealing, water pumps turning on and off, and traffic noise. Although this is more likely to disturb younger bears than those who are chronically exposed to noise, it is still an unnatural assault on their auditory systems.

Off-Exhibit Areas

We were told by staffers at CSBP that beneath the public floor are the bear catacombs, which are connected at the bears' floor level to all the pits, and that rooms for bear holding are located off these underground tunnels. None of these subterranean rooms had natural lighting for the bears. It was not clear if there were proper ventilation in these tunnels. At CBZ, the indoor cages connect at the bears' floor level, underneath the public floor, and are not visible to the public.

Safety Concerns

Public barriers bordering the pits were constructed of wood and chain-link fence and in most cases were about waist-high for an adult (refer to photos 1A, 1B, and 1C). One fence was part concrete with railings. Members of the public were observed leaning on the fences and propping small children on railings, and older children were seen climbing on fences and rails. These activities pose a significant human safety risk, including the potential for a child to fall into one of the pits. Similar incidents have been documented at other zoos in the past.

Public stand-off barriers and all barriers around visitor viewing stations that overlook bear pits need to be constantly and closely monitored by qualified staffers to determine the integrity of the barriers. Wooden barriers must be frequently inspected for damage and rot caused by humidity and moisture. The chain-link fencing needs to be inspected as well to ensure that it is properly secured to the rails and is not loose. Children would frequently lean on the chain-link fencing, pushing it inward so that they could better peer into the pits. Local building codes, health and safety regulations, and local bylaws should also be followed with regard to stand-off barriers, cage barriers, and securing open holes.

Safety instructions were not given upon entry, and no warnings were given to the public about leaning on barriers, allowing children to climb barriers, or holding children on the rails of the barriers. During our visit to CSBP, a mother allowed her daughter to climb a barrier, and a member of the group had to instruct the girl and her mother that it was not safe.

It is unknown if the facility had an emergency plan. It is frequently practiced at professional facilities and highly recommended to create an emergency plan in the event of dangerous situations such as if an individual were to fall or climb into an enclosure or an animal were to escape. Even if an escape occurs within the confines of the facility in an off-exhibit area, emergency plans should be in place to protect staff members who work in these areas. The lack of appropriate safety precautions became evident in December 2009 when a 75-year-old caretaker at CSBP was attacked by a bear as she was giving the animals water. A bear apparently grabbed the woman's coat through the cage, inflicting a serious injury to the woman's right wrist and arm and lacerating her skin near her mouth and hairline. The victim was transported to a hospital for treatment.

It is recommended that staff members be trained in emergency procedures and that they be competent and capable of responding in an emergency situation in order to protect themselves and the public. The facility puts the local community and visiting public at risk by holding bears in captivity, and these risks should be identified and managed.

Maintenance

In addition to the poor facility design, there were areas in obvious disrepair. Several of the metal doors observed at CSBP had significant rust buildup (photo 2A). The metal dish affixed to the door in the pit containing bear cubs at CSBP was bent, had jagged metal edges exposed, was buckling under the weight of the cub as he climbed on it, and had a very dangerous hole that could cause injury if the cub fell from the door (photos 2B and 2C). These metal dishes were apparently for drinking water, but some were empty while others contained a small amount of dirty water (photo 2D). There were cracks in the concrete flooring at CBZ (photo 2E).

One enclosure at CSBP was closed, as it needed repairs to the wall because the surface had cracked and crumbled away (photo 2F). The lack of appropriate housing facilities may mean that the bear or bears in this particular pit were being kept in the off-exhibit underground tunnels for the duration of the repair and being deprived of their primary feeding opportunities (public feeding) at a time when bears are especially hungry.

Cages (Santa's Land)

The bears at SL are viewed at eye level in fenced cages. The two cubs have no privacy and can be observed from all sides. The adult bears have no privacy and can be viewed from the pathway that winds along one side of their enclosure. There are no off-exhibit areas in either cage.

Cubs

The enclosure for the cubs was sparsely furnished with an old, hollow tree stump and a metal drum, both lying horizontally on a platform situated above a concrete base, presumably a nesting/resting station for the cubs. The metal drum had old straw bedding in it, but not enough to act as a cushion or help a bear maintain body heat during the night. The yard's floor, which was wet throughout, was hardpan and devoid of vegetation. There was no bear jungle gym or other designated climbing apparatus, just two or three old tree stumps and a small, shallow pool. Adjacent to this enclosure was a new mesh-covered gazebo with a public guard rail around it. This is the stage where the public cub feedings take place three times a day, at 10:45 a.m., 1:45 p.m., and 4:45 p.m.

Adults

The two adult bears (one male and one female) lived in an enclosure that was far too small to house one, let alone two adult bears. The cage had an old upright tree in the center and several tree stumps on the ground. This enclosure also lacked a pool, as required by required by Cherokee Code §19-16(1).

Lack of Protection From Sunlight and Inclement Weather

There were no appropriate shelters from the sun and inclement weather at CSBP and CBZ. Even if the bears had access to off-exhibit areas during the day, which they apparently did not, the bears may not consider this much of an option because leaving the exhibit area would mean abandoning one of their primary sources of food—that which is tossed into pits by zoogoers. Since the public viewing platforms at both CSBP and CBZ have roofs, it is possible that tourists visit these places even when it's raining.

To avoid direct sunlight, the bears must retreat to the shaded areas cast by each wall. Subordinate bears are often relegated to the sunny spots. Many of the pits may be heat traps. Ventilation is poor, so temperatures rise during the day as the sun moves from east to west. The absence of appropriate substrate materials, furnishings, and shelter makes it impossible for the bears to engage in normal thermoregulatory behavior. During hot summer days, the bears may suffer from heat stress because they have no areas where they can obtain relief except for the small, shallow pools. There was no evidence of additional shade structures, access to off-exhibit areas, fans for air circulation, misters, or anything else that would mitigate enclosure temperatures.

Shelters that provide opportunities to retreat from sunlight and inclement weather, including cold, wind, rain, snow, and storms must be provided to all bears in captivity. Sometimes a bear will enjoy standing outside in a light rain if it is a warm summer day, but storms last from minutes to days on cold fall, winter, and spring days. This does not offer the bears any possibility of drying off in a reasonable amount of time. The bear's coat is composed of a short undercoat and longer hairs called guard hairs. The fur works to insulate the body from extreme cold and extreme heat by creating a layer of temperate air between the skin and the environment. The fur's insulation does not function effectively when wet. Bears know this, and in the wild and in captivity (when given a choice), they will seek shelter from rain. Because bears know better than humans what is best for their own well being, the enclosure must give bears the option of getting out of the elements, as they would in the wild.

Bears engage in a variety of thermoregulatory behaviors to heat up or cool down but were prevented from doing so in these exposed pits. Being too hot or too cold is not only uncomfortable, it is a physical and psychological stressor.

Chief Saunooke Bear Park

Some of the pits had small overhangs (dens) where a bear could go in inclement weather, but there was usually only one shelter for at least two bears (photo 3). In such an arrangement, bears who do not get along with each other (and this occurs with all groupings of bears at some point, especially in such confined spaces) are forced to make a choice between being in the shelter area with an incompatible bear or staying outside in poor weather. In cases like this, subordinate bears often opt to stay outside away from the other bear. Shelters that can accommodate all animals at the same time must be available.

These overhangs were usually positioned in a corner and open to public view. None of the pits had privacy areas that would allow the bears to remove themselves from public view or the view of each other. Where doorways to interior accommodation were observable, they were closed.

Cherokee Bear Zoo

The only protection from sunlight consisted of angled sections of lightweight, transparent shade cloth that was only a fraction of the size of the pit's open area and positioned on the back side of several of the enclosures. These would provide only light screening from the sun in a small portion of the pit at certain times, while the walls of the enclosures would cast some shadow at other times (photo 4).

There were no shelters where a bear could go in inclement weather. Whether or not the bears were locked out on exhibit for the facility's hours of operation, the bears had little choice but to be outside in the pits, even during inclement weather, in order to be fed by the public. None of the pits were equipped with visual baffles that would allow the bears to remove themselves from the view of each other.

Santa's Land

The hollow tree log, metal drum, and overhead canopy structure in the bear cub enclosure did not offer an appropriate opportunity for retreat during inclement weather and must be replaced by a barnlike structure. The two adult bears could retreat to a single open-sided alcove, but the alcove could easily be monopolized by the dominant bear, leaving the other bear with no shelter at all. Neither enclosure provided the bears with any privacy from public view or the view of each other.

Inadequate Drainage

The wet concrete floors and standing water in the pits at CSBP and CBZ were likely caused by improper drainage and poor ventilation. Because of the fact that the concrete flooring was either uneven or entirely level (not angled), water from hosing and rain could be left standing in puddles where the bears walk and defecate and where food is tossed (photo 5). The water was not draining away, and it appeared as though the only drying process was evaporation. This may be a relatively rapid process during hot, sunny summer weather with low humidity, but not at other times.

Exposure to chronically wet floors can result in slipping and over-hydration of footpads, which can lead to peeling. Without adequate drainage and air circulation in the pit, the bears' feet can remain wet for long periods of time. The very important natural oils in a bear's paw pads are sucked out of their skin because of the water and concrete surface. This causes the paw pads to dry out and crack. In these small confines, bears will inevitably step in fecal material, which can cause the cracks in their paws to become infected, leading to foot sores. Without veterinary treatment, these sores can cause severe pain and the infection can spread. Standing water also provides a breeding ground for bacteria and insects, such as mosquitoes harboring West Nile Virus, which is active in North Carolina.⁴

All bear enclosures must be well drained and provide dry rest areas, preferably multiple sites, for the bears they confine.

According to information and photographs (photo 6A) posted on EasternBand.com, effluent from the bear enclosures at CBZ may be flushed directly into the Oconaluftee River. The photos show what appear to be drainage pipes leading from the pits toward the river; these were not near any apparent downspouts. CSBP is also situated alongside the river, and a similar photo (photo 6B) taken by the inspection team shows what appears to be a drainage pipe where effluent from the bear enclosures that may include raw sewage and bleach washes out into the Oconaluftee River.

Concrete

All bears were housed on concrete, with the exception of the cub enclosure at SL, which was a hardpan floor surface. Both are inappropriate.

All bears are physically and behaviorally structured to live on soft surfaces. Hard surfaces such as concrete are anathema to good bear husbandry because they are uncomfortable, may be physically damaging, and are inherently boring. All bears engage in a broad range of ground-centered behaviors, including but not limited to digging, rooting, and foraging; making various kinds of day beds, nests, and dens; self-medicating; etc. Concrete leaves the bear with nothing normal to do and is not an appropriate substrate for a primary enclosure.

ABSENCE OF ESSENTIAL ENVIRONMENTAL ENRICHMENT

The adult bears and cubs at all three Cherokee facilities were in desperate need of an extensive daily enrichment program. The concrete pits were devoid of any natural substrate that would provide the bears with materials to investigate, manipulate, use to construct day beds, or safely scratch against, dig in, or root in.

Environmental enrichment is a vital part of basic, essential bear husbandry. The purpose of enrichment is to help create a complex and suitable living environment for the bear. Researchers conclude that bears are inquisitive, playful, intelligent, and highly manipulative, devoting a large part of their day to foraging for food.⁵ While enrichment is necessary in most captive environments, it does not replace the need for a properly designed enclosure.

Structural enhancements, furnishings, and other forms of enrichment serve a number of functions. They encourage species-typical movement and behavior (including exploratory seeking and foraging behavior), provide different microclimates for thermoregulatory actions, provide privacy from visitor view and conspecifics, reduce intraspecific competition and aggression, provide climbing opportunities, increase functional space, facilitate sensory-enrichment strategies, and provide olfactory and visual stimulation through the use of elevated perches to allow bears to catch windborne smells as well as to see beyond the confines of the enclosure.

A great deal of a bear's behavioral repertoire is directed at foraging for food, and a considerable portion of a bear's daily time budget is devoted to food acquisition, especially during the fall when many bears must accumulate substantive fat reserves. Proper behavior-based husbandry dictates that foods must be presented in enrichment-style feedings (through scatter feeds, puzzle feeders, lunch-sized bags and boxes, and any other enrichment format that encourages normal bear foraging behavior).

There was at least one bear at CSBP whose fur was matted, likely because of a lack of furnishings to rub against in order to discard naturally shed hairs. Shedding of fur is an ongoing process, but the majority of it occurs in the spring and is typically over by early summer for bears with access to trees, big rocks, or other appropriate rubbing structures. Matted fur can cause itching and skin irritation and interfere with temperature regulation. Well-groomed fur creates an envelope of temperate air between the bear's skin and the environment. Matted fur can make the bear overheat in the summer and be cold in the winter.

BEHAVIORAL STRESS

All bears at the Cherokee zoos were displaying classic stereotypic behavior, specifically pacing and head-weaving. These rote, meaningless, repetitive movements are typically expressed by bears who are kept in undersized, sensory-deprived conditions. Stereotypies often indicate an abnormal interaction between the bear and his or her surroundings and can be indicative of diminished welfare.

Most of the bears were also actively engaged in begging behaviors, triggered when the visitors above threw food down to them. When visitors were present, the bears were standing on their hind legs, waving their paws, spinning, rolling on their backs, and/or snapping their mouths, but when the visitors moved on, the bears changed to seriously entrenched pacing and head-weaving, with the exception of two of the Asiatic black bears who became inactive and lethargic and appeared depressed. For the entire duration that these bears were in their outside exhibits, they were exhibiting aberrant behaviors. The begging behavior is a complete bastardization of a bear's normal food-gathering behavior and is a testament to the extreme lengths to which these bears have to go in order to cope on a daily basis in this substandard environment. When animals are not allowed to express their normal behavior because they live in an environment that is so alien to their genetic expectations, they are constantly forced to compromise, and the stress of doing so is extreme.

Throughout the pits, numerous wear patterns were observed on the walls, indicating prolonged pacing along the perimeters of the pits as well as reaching up the walls in certain locations. The wear patterns were obvious and extensive.

There was a stark contrast between the abnormal behavior of the cubs at CSBP and those at SL. The cubs at CSBP were frantic and constantly on the move, either pacing along the back wall and then throwing their head when they reached the corners, bawling at the crowd above while standing up and hanging onto the suspended tires, or climbing onto and hanging off the metal door. At the other end of the spectrum, the cubs at SL were abnormally subdued. They did not exude the high energy level, curiosity about their environment, or desire to play with their handlers or each other that cubs normally exhibit. In our professional opinion, the cubs at SL appear to have been negatively reinforced by the handlers, which could include physical punishment, in order to suppress normal play behavior during the public feeding demonstrations.

Preventing appetitive behavior patterns in animals can give rise to stress and frustration and impair the development of brain regions that are involved in behavioral sequencing, thereby reducing the animals' ability to behave flexibly and appropriately.⁶ Because of the lack of appropriate natural sensory and mental stimuli, restriction of purposeful movement, boredom, lack of exercise, and loss of freedom of choice and control over their environment, animals in captivity often divert their energies and anxiety into abnormal behavior.

The mammalian brain functions similarly whether it is in a human, a mouse, or a bear. Research indicates that sensory-deprived humans, such as prisoners in "Supermax" prison facilities—living in concrete cells, doing and eating the same things every day at exactly the same time—also develop serious aberrant behaviors similar to those of bears in pit enclosures.⁷

Behavioral stress can also result from pit-style exhibits that do not offer any opportunity to escape public viewing or seek privacy. It has long been recognized that bears are at a psychological disadvantage when kept in pits with visitors staring down at them. Brown bears are at the top of their food chain, and black bears are near the top. In a pit-style enclosure, the bears feel trapped and vulnerable to humans whom they perceive as predators. This vulnerability acts as a constant, never-ending stressor.

A basic design principle for captive animal exhibits is that the animals should always be positioned at or above the eye level of the visitors who observe them. Not only does this make the animals appear more majestic, it also allows them to feel more comfortable and secure. Humans who view animals in pits from above psychologically perceive them as lesser beings or entities as opposed to living beings deserving of respect. If the animal is elevated to human eye level or above, then the human viewer instinctively elevates the animal's value, stature, and respectability.

Chronic stress is a type of stress that seems never-ending and inescapable. With continued exposure to chronic stress, such as the impoverished living conditions of the captive bears in Cherokee, serious psychological and physical health problems may develop.

IMPROPER DIET

At the Cherokee facilities, no consideration had been given to the diversity of food that bears consume in the wild or to their complex foraging and food-acquisition activities. It appeared as though the main food item for all the bears was commercially prepared dog chow, fed to them at the same time each day, supplemented by whatever the visitors to each facility fed them, which was predominantly dog chow at SL and white bread, apples, and iceberg lettuce at CSBP and CBZ. These foods were probably used because they are the cheapest to purchase, but they provide little nutritive value to the bears. The animals' diets were so benign as to be hazardous to their health both mentally and physically.

Employees did not monitor food consumed during uncontrolled public feedings and apparently did not monitor how much each bear ate when the animals were fed by staffers. The two older black bears at SL appeared to have been fed dog chow by a staff member near the end of the day through tube feeders, as there were two large piles left at each feeder. One bear had finished eating his food and had moved in on the other (presumably female) bear's food pile. The female bear was vocalizing her displeasure and trying to move her pile aside but could not eat it fast enough to prevent losing some of her food to her cagemate.

Bear stools (photo 7A) observed in each facility were uniform in color and consistency, indicating a diet almost exclusively of dog chow. They looked nothing at all like wild bear scat or the scat of captive bears who are fed a more varied diet (photo 7B). Not only is dog chow inappropriate from a nutritional perspective (being excessively fattening and too high in protein), it is boring and unstimulating and may lead to serious metabolic disturbances and diseases. Zoo veterinarians have long suspected that excessively high protein levels in processed foods are causing the extremely high incidence of fatalities caused by cancer in captive bears.⁸ Dog chow was probably in use because it is cheap and requires minimal labor. This dog chow/bread/lettuce/apple diet is a subsistence diet that is meant only to keep the animals alive, but it does not meet their nutritional

requirements, nor does it provide the bears with the appetitive behavioral stimulation that they require.

During each of the three public cub feeding sessions at SL, the bear cubs received a baby bottle (1 cup) of sweetened drink such as Hawaiian Punch, which is extremely high in refined sugars. This totals to an unhealthy daily dose of 3 cups (photo 7C). These young omnivores need a wide variety of seasonally appropriate fruits, berries, insects, and vegetation, including willow, cottonwood, maple, and other species of browse, on a daily basis. On a twice-weekly basis, the cubs should be getting a whole-carcass feeding, e.g., a chicken or a small mammal such as a rabbit.

Brown and black bears are largely opportunistic omnivores who consume a wide variety of food items, including herbs, flowers, nuts, tubers, shoots, berries, and fruits; trees such as willow, cottonwood, and sugar maple; and grubs and larvae, insects, bird eggs, fish, ungulates, carrion, etc.

Brown and black bears are highly vegetarian and in captivity should be provided with a highly vegetarian diet made up of foods that are seasonally available in their natural habitat. For example, the American black bear should be eating the following:

Season	American Black Bear Diet
Early spring	dried fruits, nuts, branches, some insects, fish, whole carcasses, and tubers
Spring/summer	leaves, tubers, fruits, fish, insects and insect larvae, whole carcasses
Late summer/fall	fruits, berries, nuts, leafy greens, woody browse and tubers, some fish and whole carcasses

The brown bear’s diet is similar to that of the American black bear, but it should include approximately 6 to 10 percent more meat proteins. The diet for both bear species should never contain more than 30 percent chow. Throughout the winter, denning bears should always have access to water and a pile of chow.

The diet must also take into consideration each individual bear’s nutritional needs, which are dictated by a variety of factors, such as age, sex, energy expenditure, season, pregnancy, etc. For example, a nursing female will need more protein-rich foods. Chow is too high in fat for spring feeding and possibly too low in fat and natural sugars for fall feeding. High-protein dog chows have too much protein for omnivorous adult bears and perhaps too little for sub-adult bears.

For the most part, the bears also did not appear to have a consistent source of drinking water other than the pools, which means that they were drinking their bath water. Several bears at CSBP were observed drinking from the pools, and metal dishes that were apparently intended for drinking water were often empty or dirty.

UNCONTROLLED PUBLIC FEEDING

Public feeding was a serious issue. All three facilities encouraged visitors to purchase food to feed to the bears. At CSBP and CBZ, chopped apples, bread, and iceberg lettuce on a small recyclable cardboard tray were being sold to the public to feed to the bears. Food dispensers containing dog chow were evident at CSBP and SL. At CSBP and CBZ, the public threw the food into the pits. At SL, food was either thrown into cages or dropped into a PVC tube leading to the cages. The tube feeders appeared difficult to clean and disinfect, and all the feeders were dirty (photos 8A and 8B). Visitors could easily give the animals food items that they brought from outside the zoo.

In addition to encouraging abnormal begging behavior and intraspecific competition and aggression, it was impossible for the handlers to know exactly what quantity of food and caloric intake each bear consumes per day. Many of the bears appeared hungry and were apparently not being fed enough food to satiate them throughout the day.

Food tossed into the pits can be contaminated by unsanitary handling or as a result of landing in pools, puddles, or excrement. The paper food trays were being collected and presumably reused, likely without being sanitized after each use. The female staff member at CSBP who was cutting the food and arranging it on the trays was not wearing gloves (photo 8C). The people who were throwing the food at the bears were not wearing gloves. This means that bacteria were constantly being transferred from members of the public to the bears. Human children, who are notorious for not washing their hands, pelted foods at the bears all day long. Zoo professionals wear gloves in food preparation areas in order to minimize the risks of contaminating foods and transmitting zoonotic diseases.

This form of public feeding introduces unnecessary competitive stress between the bears and sets the animals up for incompatibility. In every group of two or more bears, there is always one dominant animal. Subordinate bears will get fewer calories. Numerous instances of aggression between individuals were observed. For example, there was tension between the adult bears at SL during feeding time. The larger of the two finished his single, piled feeding first and then displaced the other (presumably the female) from her pile as she complained. At SL, one cub was observed spending excessive amounts of time positioned at the end of one of feeding tubes, perhaps “guarding” a preferred feeding site.

Encouraging the public to toss food at the bears, coupled with the open air space above all the pits, permitted the introduction of any number of foreign objects that may be ingested by the novelty-deprived bears and could potentially lead to indigestion, toxicities, intestinal blockages, intestinal perforations, and even death. Signs disallowing such practices fail because they make three false assumptions: (1) All visitors are literate, (2) all visitors can read English, and (3) all people obey signs. Children, many too young or too distracted to read signs and not old enough to be responsible, are the most likely to commit infractions.

The public feeding must be stopped, and all foods must be presented in enrichment-style feedings (through scatter feeds, puzzle feeders, lunch-sized bags and boxes, and any other enrichment format that encourages normal bear foraging behavior).

DAILY HUSBANDRY

The daily keeper routine at CSBP and CBZ is uncertain, but there was evidence that the routine did not differ from the age-old “clean ‘em, feed ‘em, and lock ‘em outside” routine. The basic routine was as follows:

- The outside enclosure is hosed down for cleaning.
- It is probable that the bears are not given breakfast so as to enhance their need to “beg” for food from the zoo patrons.
- The bears are locked outside on exhibit.
- The off-exhibit cages and underground catacombs are hosed down or shoveled out at some point during the day when it is convenient for the caregiver.
- The bears spend the day exhibiting aberrant behavior, either begging for food or pacing.
- The bears are locked in after closing hours.

The bears were likely being locked in at night. This compounds their problems even further, as they will be even more deprived of stimulation than they are in their day exhibit. If the facility’s hours are from 9 a.m. to 9 p.m. on a summer day, this means that the bears spend 12 hours exhibiting aberrant behaviors in the pit and 12 hours in the cages underground or off-exhibit without proper sunlight and stimulation. If the facilities shorten their operating hours during the weekdays after Labor Day (from 9 a.m. to 6 p.m.), it means that the bears spend nine hours exhibiting aberrant behaviors in the pit and 15 hours in the holding cages without proper sunlight and stimulation. It is likely that these bears have also developed regular pacing patterns in the indoor or underground cages. If this routine were imposed on humans or even canine companions, we would consider it extremely inhumane.

There was no evidence of straw or any other bedding materials for the bears and no digging beds or leafy browse for making day beds. Evidence of bedding given to the bears in the indoor enclosures would likely have made its way out into the outdoor enclosures in the bear’s fur, but no bits of straw hay or wood wool were observed. It is unlikely that these bears were being given bedding of sufficient quantity and appropriate material or possibly even any bedding at all.

At SL, it seemed that the full extent of the husbandry is simply feeding, cleaning, and leaving the animals alone, with the exception of the three public bear cub feedings. Furthermore, the straw in the metal drum in the bear cub enclosure was old and soiled and was not being replaced with fresh, clean straw at appropriate intervals.

SEASONAL HUSBANDRY

Captive bears, whether or not they are given the opportunity to den, go through seasonal biochemical changes. If they are not given the opportunity to den, they can become short-tempered, confused, and slower in their responses to their environment. It is similar to sleep deprivation. Denning also serves an important biological function of renewal for the bear. These effects are not yet fully understood by scientists, but they include, for instance, foot pad sloughing.⁹ Although in warmer climates there are a few bears who choose not to den, each wild bear has the freedom to assess his or her own biochemistry and has the ability to determine whether or not to go through a winter without denning.

In order to den, a bear in captivity needs the appropriate body weight as well as a quiet, dark, cool, private place with bedding. It is both physically and mentally stressful to force bears to shift enclosures to accommodate human activity and not to provide them with bedding, privacy, and the choice to den.

Chief Saunooke Bear Park

The female staffer at the gate told us that the bears are allowed to den up during the winter. She spoke knowledgeably about the procedure, thereby establishing some credibility that this is actually the winter routine. According to her, after November 30, when the facility closes for the season, the keepers provide the bears with leaves in the underground cages. The bears use the leaves to make beds and den up. Apparently, staff members check on them with flashlights, and if any of the bears are up, they are given food and water. This is an appropriate denning routine. The problem is the location of the dens. The entire structure of the building is located precariously close to the Oconaluftee River, which has a history of flooding, and if the river rises, it may flood the bear catacombs under the building.^{10,11} It is unknown whether the underground bear catacombs have heating, cooling, or air circulation systems.

Cherokee Bear Zoo

This facility is open year-round, and we were informed by staffers that their bears are “domestic” bears and thus that they “do not need to den up throughout the winter,” despite the fact that wild black bears in the Smoky Mountains den up, wild brown bears living in warmer climates such as Spain and the Gobi desert den up, and the same species of captive bears located at CSBP—less than 5 miles from CBZ—choose to den up.

Santa’s Land

SL closes on November 1 and reopens on May 1. At the end of the season, staffers dispose of the two adult bears and bring in a pair of new cubs in the spring. There were no proper denning facilities in the yard containing the cubs.

VETERINARY CARE

A complete veterinary care program must include measures to *prevent*, not just treat, disease, injury, illness, pain, and suffering, and it must encompass all aspects of an animal's physical, mental, and emotional health. The facilities in Cherokee had not established a complete veterinary care program.

In addition to numerous physical health concerns caused by the improper caging and inadequate husbandry, the bears endured chronic stress and great psychological suffering. The needs of the bears were supplanted by the human agenda of running a profitable business in which the priorities are minimizing overhead (i.e., large numbers of bears in small spaces, low staff costs, low-maintenance cement enclosures, minimal cage furnishings, and a foodstuff that is convenient, relatively inexpensive, and easily stored), and providing entertainment value for their customers (i.e., charismatic wild animals, unobstructed public viewing, and public feedings).

CONCRETE AND RELATED PHYSICAL TRAUMA

Concrete is uniform, abrasive, and unyielding. As such, it contributes to damage to the skeletal system as well as to muscle strain, circulatory compromise, footpad lesions, callus formation, and pressure sores.

Although not outwardly obvious, excessive pressure on limbs and tissue leads to bruising, discomfort, and circulatory compromise. A bear would normally construct a day bed or den by digging into dirt. Naturally, therefore, a bear's tissue suffers excessive pressure when the animal is forced to rest his or her considerable mass on rock-hard surfaces. Similarly, there is the potential for considerable injury should a bear fall onto a concrete floor, as could occur in the instance of the cubs at CSBP, who were suspended several feet above the floor when climbing on the metal door.

Concrete absorbs heat and can cause burns on very hot days. As there was insufficient provision of shade, save for a shadow occasionally cast by a wall, bears could incur thermal burns when locked in their outdoor enclosures during the day.

In addition, during hot weather, the heated concrete draws out moisture and oils from the footpads, encouraging cracks.

Concrete is cleaned with detergents or bleach. Captive animals can suffer chemical burns to their feet when bleach is under-diluted or left to dry on the concrete before it is rinsed off.

As drainage of the concrete floors of the pits was poor, standing water was a problem. When feet are not allowed to dry out, they are prone to overhydration and subsequent peeling of the pads. Standing water is also a breeding ground for infectious agents, which are often antibiotic-resistant, and once infections are established, foot problems typically become a chronic issue.

Calluses may build up on the footpads when they are subjected to hard, uniformly unforgiving artificial surfaces. Heavily callused pads lose their flexibility and their ability to absorb shock. Consequently, the joints undergo more wear and tear, leading to gradual deterioration and

arthritis. Calluses also tend to crack when they are exposed to abrasive surfaces. Cracks in the footpads are very painful and prone to infection. The source of infection can be standing water, feces, urine, or decomposing foodstuffs. Foot wounds that become contaminated by environmental pathogens are extremely difficult to treat, as healing is delayed by constant use of the feet as well as the bacteria's level of antibiotic resistance. Besides being a source of constant pain, sore feet further limit mobility in bears who already do not get sufficient exercise. Decreased mobility contributes to obesity, which leads to increased weight supported by the feet, which worsens pre-existing foot problems.

In cases in which calluses have not had time to develop or animals demonstrate stereotypic behaviors such as pacing on concrete floors, footpads are subject to thinning and the formation of blisters and ulcers.¹² Exposed soft tissue and unprotected nerve endings can result in secondary infection or extremely painful sores that heal poorly or re-flare because of constant weight-bearing.

Feet

The main function of the foot is to act as a shock absorber as weight is shifted with every step. The flexible sole also allows contact with the various irregularities of a natural environment; this keeps the muscles and tendons of the feet and legs properly toned, drives blood in the extremities back to the heart, and provides tactile feedback to the bear regarding his or her environment.

The foot is designed to adapt to a variety of surfaces, from soft to hard; however, periods of protracted weight-bearing on flat, hard surfaces such as concrete can give rise to serious foot, joint, muscle, and circulatory problems. Humans have commonly regarded excessive standing or walking on concrete as a workplace safety hazard for their own species.

Overuse of the feet was evidenced by the worn claws and the paths that the bears had worn into the concrete around the pit doors.

Footpads

Footpad trauma from constant contact with hard, abrasive concrete was evident in some of the bears observed. Being in constant contact with concrete flooring, the footpads of the bears were subject to the potential for thermal, chemical, and/or mechanical trauma.

Photo 9A taken at CBZ shows wear points in the center of each toe pad. This is the weight-bearing area on the footpad. Forefeet take the brunt of the wear and tear, as 60 percent of the body's weight is carried forward, and this is exacerbated with obesity. And when bears become arthritic, they will shift even more weight forward in effort to relieve hip pain.

Photo 9B of a bear in the Marge/Elvis pit at CBZ shows what appears to be a deep crack and wear point on the right front paw, central footpad. Most of the toe pads have central wear points. The light spots are areas where the pad leather has worn down to softer, more sensitive tissue, and this foot would be tender to walk on. With further wear, these areas could develop ulcers. Pad cracks are very painful (like heel cracks in humans).

Photo 9C of a bear in the Marge/Elvis pit at CBZ shows that the left forepaw, main pad, has a deep crack, and the outside toe pad has a wear point. A black bear at CSBP showed a lesion on the left forepaw and the second-to-last outside toe pad.

Photo 9D of a bear in the Marge/Elvis pit at CBZ shows the left rear paw. The main footpad has deep cracks, and the outside toe pad appears to be raw.

Photo 9E of an Asiatic black bear at CSBP shows a pink area on the rear left footpad that may indicate a wear point.

Claws

The claws of the bears, most notably the grizzlies, were worn down to the point where they met the ground. These claws are substantially longer in free-ranging wild bears and captive bears housed on suitable substrates. Photos 10A and 10B show the worn-down claws of the captive bears in Cherokee versus normal claws in 10C. Although this reduced claw length is not itself a problem, it illustrates that material hard enough to chisel claws down to half their length will wreak havoc on the softer footpads that must endure this hard abrasive material day after day.

Osteoarthritis

Bears who are kept on concrete and other unyielding surfaces such as hard, compacted earth are subject to the premature development of arthritis. Micro-traumas that occur over time, associated with repetitive movements, overuse, and/or overloading of the musculoskeletal system, set these bears up for progressive cartilage loss, inflammation, and bony changes in their neck, spine, and joints. The chronic pain associated with osteoarthritis further limits mobility in these already exercise-deprived bears, which leads to more weight gain.

Obesity, immobility, and chronic stress precipitate circulatory problems, which lead to chronic infections, and another vicious cycle is created. Chronically infected feet also lead to osteomyelitis and breakdown of the bones of the feet, a condition that often leads to euthanasia.

Obesity, Poor Muscle Tone, and Nutritional Concerns

All the bears observed had poor muscle tone. At CSBP, two of the Asiatic black bears (photo 11A) and several of the adult black bears (photo 11B) and a black bear at CBZ (photo 5) were notably overweight or obese. A grizzly at CBZ was notably thin (photo 11C). As the maintenance of muscle mass is contingent on proper exercise, even bears who fall into normal parameters for weight will have significantly less muscle mass and tone when compared to their wild cousins.

Dog chow, white bread, iceberg lettuce, apple slices, and sugary drinks are not a nutritionally complete diet for bears who require a wide variety of seasonally available foods such as whole fruits, berries, vegetables, tubers, nuts, browse with bark, some fish, and whole carcasses. In fact, government inspectors have recognized similar improper diets on inspection reports for other licensees, writing, "Bears in captivity are developing health problems due to the large amount of sweets that they are being offered," and "Dog food is not a complete nutritional diet for bears."^{13,14}

In nature, bears devote a large part of their day to foraging for food. This activity is essential to maintaining physical fitness. Not only did the bears confined in pits and cages lack the space to perform this natural daily behavior, they were handed their food (at specific times by keepers and randomly throughout the day by the public), and most of it was in an unnatural form (dog kibble).

The lack of proper exercise, coupled with unregulated feedings and a highly processed, high-protein kibble designed for dogs, leads to obesity and poor physical fitness. (Obesity was not as significant in the lower-ranking bears who may have been prevented from eating the amounts offered.)

The extra pounds of fat carried around by an obese bear exert additional pressure on all joints and the spine, eventually causing the wearing away of the protective cartilage and resulting in osteoarthritis. Along with the burden on their spine and joints, obese bears lose their lean muscle mass, further weakening their already overtaxed musculoskeletal system.

Psychologists have long understood the direct effects that exercise—and the lack of it—has upon depression in humans. For people, exercise can be as crucial to maintaining proper mental health as it is to maintaining physical well-being.¹⁵

Assessing an animal's appetite on a daily basis is absolutely necessary to monitoring the animal's health. Bears may not exhibit obvious signs of sickness, because doing so can make them vulnerable in their natural habitat. Therefore, poor appetite can be an important indicator of a health issue. A keeper may think that a bear is full from uncontrolled public feeding and ignore critical signs of poor appetite during any supplemental feeding provided by staffers. At SL, a keeper dumped dry dog food in the cage of the two older bears and left, not watching to see if both bears consumed their rations.

CHRONIC PAIN: NECK, BACK, AND SHOULDERS

Bears evolved as quadrupeds who on occasion can stand briefly on their hind limbs to get more information about their surroundings. Bears in pits must constantly point their heads straight up, sit on their haunches, or stand erect for prolonged periods to view the activity that is most prevalent 10 or more feet above them. Even when they stand up, they still need to crane their heads. It is well documented that even in species that are bipedal, such as humans, keeping the body in an upright position for any length of time requires considerable muscular effort and is particularly unhealthy when standing motionless. The blood supply to the loaded muscles is reduced, which accelerates the onset of fatigue and causes pain in the muscles that are used to maintain an upright position, specifically the legs, back, and neck. Prolonged and frequent standing causes blood to pool in the legs and feet, causing circulatory problems.¹⁶ Furthermore, repeatedly holding the neck or back in abnormal positions results in chronic back and neck alignment problems as well as muscle strains and the development of trigger points or “knots” in the muscles, all of which cause chronic and considerable pain.

DENTAL PROBLEMS

Excessive calculus buildup was noted on all bears for whom a look inside the mouth was offered. The following problems were also observed:

At CSBP, the smaller grizzly had lost both lower canine teeth and showed a possible abscess (photo 12A). In the wild, this would only happen in bears who are near the end of their life (i.e., 25 to 35 years of age). It appeared that she may have had an abscess in the cavity where the lower left canine tooth used to be. There appeared to be unhealthy yellowish tissue in that location instead of normal-looking gum tissue. The loss of two major teeth (and perhaps more) is a testament to the poor level of healthcare and the inappropriateness of the bear's diet and enrichment. The possible abscess is a serious welfare issue, as a tooth root abscess is excruciatingly painful and needs urgent attention in the form of analgesics, antibiotics, and treatment of the primary cause.

Photo 12B shows a grizzly bear at CBZ with normal lower canine teeth (for comparison to the one described above) but demonstrates the increased level of calculus buildup seen in captive bears on inappropriate diets.

The grizzly bears at CBZ named Marge and Elvis had their right lower canine teeth worn or fractured down to the pulp cavity. The black areas inside the tooth are pulp cavity and dentin (photo 12C).

There was moderate calculus buildup on the teeth of a black bear and an Asiatic black bear at CSBP (photo 12D).

The soft tissue inside the tooth is called the pulp and contains blood vessels, lymphatics, nerves, and various other soft-tissue elements. If the pulp is exposed, so are the sensitive nerves within the pulp, and bacteria have a direct pathway into the tooth, setting up conditions for a tooth abscess.

Where the pulp cavity is exposed because of excessive wear or a fracture, there are only two treatment options: restoring the tooth with a root canal procedure or extracting it. Leaving such a tooth "as is" is not an option, as tooth pain is considered to be one of the most intense on any pain scale.

Rausch (1961) found periodontal disease in wild bears primarily as they reached the end of their lifespan and no periodontal disease in bears estimated to be less than 12 years of age.¹⁷

In comparison to free-ranging wild bears, bears kept in pits were found to have much higher levels of calculus buildup in general, and those over 10 years of age had severe wearing of their canine teeth and teeth with exposed pulp cavities. Wenker et al. (1999) stated, "Stereotypical behavior like cage chewing is a suspected cause of canine tooth and secondary alveolar lesions, whereas a nutritionally inappropriate diet and inadequate opportunities for tooth-cleaning activities are responsible for the lack of natural cleaning and the extensive calculus formation that results."¹⁸

Wenker et al. (1998) also noted, "The dental health status of zoo animals is an indicator of their general well-being. Preventive measures should be taken in their environment and management to minimize the risk of dental conditions."¹⁹

REPRODUCTIVE STRESS

The female bears in the Cherokee zoos were typically housed with a male; therefore, a female could conceivably be impregnated as often as once a year. Where the presence of cubs suppresses hormone cycles in wild female bears, sows in bear pit operations go back into heat when their cubs are removed to be hand-raised. Not only are earlier and more frequent pregnancies taxing on the body, but the emotional and mental strain of losing one's cubs once, let alone regularly, could be extraordinary.

These bears may be bred earlier and more often than bears in the wild. Male and female black bears may attain sexual maturity between their second and fourth years in captivity, but in the wild, such maturity often comes later, the age of first breeding varying between the third and fifth year. A free-ranging female grizzly would not have her first litter until she is 5 to 7 years old.

In the wild, young black bears normally remain with their mothers until they are 16 to 17 months old, so female bears usually mate only every second year. Female grizzly bears only breed at three- to four-year intervals.

PARASITES

Evidence of intestinal parasitism was observed in the two cubs at SL (photo 13) as well as the two youngest bears at CSPB, who had hair missing from around the perianal regions on the backs of the hind limbs. This pattern of hair loss suggests rubbing of the backsides along the ground in response to itching caused by roundworms and/or resulting diarrhea. Their dull hair coats can be interpreted as another symptom of intestinal parasitism. According to the American Zoo and Aquarium Association, "Because bears are more prone to internal parasites than some other large mammals, fecal exams should be performed twice a year and treated appropriately."²⁰

SKIN CONDITIONS

An Asiatic black bear from CSBP had a moist dermatitis on his chest under his chin (photo 14A). Moist dermatitis is usually a secondary bacterial infection of skin.

Photo 14B shows a black bear at CSBP who had not shed out properly because there was a lack of appropriate surfaces to rub against. Matted fur can cause itching and skin irritation and interfere with the bear's ability to thermoregulate.

Photo 14C shows a grizzly bear at CBZ with an apparent rub wound on his head.

ANALYSIS OF COMPLIANCE WITH THE ANIMAL WELFARE ACT

This report is based on inspections conducted as a zoogoer. While access to off-exhibit areas, veterinary care records, food storage areas, etc., would yield a more comprehensive report, there were a significant number of obvious Animal Welfare Act (AWA) violations identified from casual observation.

Sec. 2.40 Attending veterinarian and adequate veterinary care (dealers and exhibitors).

(a) Each dealer or exhibitor shall have an attending veterinarian who shall provide adequate veterinary care to its animals in compliance with this section.

(1) Each dealer and exhibitor shall employ an attending veterinarian under formal arrangements. In the case of a part-time attending veterinarian or consultant arrangements, the formal arrangements shall include a written program of veterinary care and regularly scheduled visits to the premises of the dealer or exhibitor; and

(2) Each dealer and exhibitor shall assure that the attending veterinarian has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

(b) Each dealer or exhibitor shall establish and maintain programs of adequate veterinary care that include:

(1) The availability of appropriate facilities, personnel, equipment, and services to comply with the provisions of this subchapter;

(2) The use of appropriate methods to prevent, control, diagnose, and treat diseases and injuries, and the availability of emergency, weekend, and holiday care;

(3) Daily observation of all animals to assess their health and well-being; Provided, however, That daily observation of animals may be accomplished by someone other than the attending veterinarian; and Provided, further, That a mechanism of direct and frequent communication is required so that timely and accurate information on problems of animal health, behavior, and well-being is conveyed to the attending veterinarian;

(4) Adequate guidance to personnel involved in the care and use of animals regarding handling, immobilization, anesthesia, analgesia, tranquilization, and euthanasia; and

(5) Adequate pre-procedural and post-procedural care in accordance with established veterinary medical and nursing procedures.

AWA noncompliance concerns: There was evidence of dental problems, internal parasites, skin conditions, footpad trauma, poor physical fitness, and obesity in a number of the bears. The bears were not being provided a nutritionally complete diet. Daily observation of a bear's appetite could not be properly assessed because of the uncontrolled public feeding.

Sec. 2.131 Handling of animals.

(a) All licensees who maintain wild or exotic animals must demonstrate adequate experience and knowledge of the species they maintain.

(b)(1) Handling of all animals shall be done as expeditiously and carefully as possible in a manner that does not cause trauma, overheating, excessive cooling, behavioral stress, physical harm, or unnecessary discomfort.

AWA noncompliance concerns: Indicators of behavioral stress included abnormal and stereotypic behavior, which was rampant in the bears at all three Cherokee facilities. Overheating could occur on hot days in the poorly ventilated pits. CBZ's practice of not permitting bears the choice to hibernate could be a significant source of behavioral stress.

(b)(2)(i) Physical abuse shall not be used to train, work, or otherwise handle animals

AWA noncompliance concerns: At SL, there were signs that the cubs, who were strangely subdued and appeared to avoid contact with their handlers, may have been physically abused in an effort to prevent normal, rambunctious behavior during public bottle-feeding demonstrations.

(c)(1) During public exhibition, any animal must be handled so there is minimal risk of harm to the animal and to the public, with sufficient distance and/or barriers between the animal and the general viewing public so as to assure the safety of animals and the public.

AWA noncompliance concerns: There were inadequate barriers between the bears in pits and the viewing public. Members of the public lean on the fences surrounding the pits and prop their children on railings, and children were seen climbing the fence and rails. This posed an unnecessarily great risk of harm to the public, particularly the risk of children falling into the pits.

(d)(1) Animals shall be exhibited only for periods of time and under conditions consistent with their good health and well-being.

AWA noncompliance concerns: In accordance with this provision, the U.S. Department of Agriculture's (USDA) *Animal Care Resource Guide: Exhibitor Inspection Guide*, Sec. 12.4, recommends that "wild and exotic animals on public display have an area where they can hide from public view." None of the bears had areas where they could hide from public view.

(d)(4) If public feeding of animals is allowed, the food must be provided by the animal facility and shall be appropriate to the type of animal and its nutritional needs and diet.

AWA noncompliance concerns: The limited variety of foods provided did not meet a bear's nutritional needs, and it was impossible for the facilities' staff to determine how much food each bear was consuming with the current public-feeding practices.

(e) When climatic conditions present a threat to an animal's health or well-being, appropriate measures must be taken to alleviate the impact of those conditions. An animal may never be subjected to any combination of temperature, humidity, and time that is detrimental to the animal's health or well-being, taking into consideration such factors as the animal's age, species, breed, overall health status, and acclimation.

AWA noncompliance concerns: The lack of shelter from sunlight and inclement weather presented a threat to the bears' health and well-being. Because of the design of the pit enclosures, the temperature and humidity in the summer could reach unacceptable levels from which the bears would be unable to obtain relief.

Sec. 3.125 Facilities, general.

(a) *Structural strength.* The facility must be constructed of such material and of such strength as appropriate for the animals involved. The indoor and outdoor housing facilities shall be structurally sound and shall be maintained in good repair to protect the animals from injury and to contain the animals.

AWA noncompliance concerns: The metal dish attached to the rusty door in the bear cub enclosure at CSBP was unsafe and not structurally sound, as it was buckling under the weight of the bear. Also, at the base of the door there was a very large hole in the concrete, which could pose a serious threat of injury if a bear were to fall while scaling the door.

(d) *Waste disposal.* Provision shall be made for the removal and disposal of animal and food wastes, bedding, dead animals, trash and debris. Disposal facilities shall be so provided and operated as to minimize vermin infestation, odors, and disease hazards. The disposal facilities and any disposal of animal and food wastes, bedding, dead animals, trash, and debris shall comply with applicable Federal, State, and local laws and regulations relating to pollution control or the protection of the environment.

AWA noncompliance concerns: There is evidence that waste materials may be being flushed directly into the Oconaluftee River, likely in violation of federal and local laws and regulations regarding pollution control and the environment.

Sec. 3.126 Facilities, indoor.

(b) *Ventilation.* Indoor housing facilities shall be adequately ventilated by natural or mechanical means to provide for the health and to prevent discomfort of the animals at all times. Such facilities shall be provided with fresh air either by means of windows, doors, vents, fans, or air-conditioning and shall be ventilated so as to minimize drafts, odors, and moisture condensation.

AWA noncompliance concerns: While this section pertains to indoor facilities, the construction of the pits made poor ventilation a serious issue in the outdoor housing facilities.

Sec. 3.127 Facilities, outdoor.

(a) *Shelter from sunlight.* When sunlight is likely to cause overheating or discomfort of the animals, sufficient shade by natural or artificial means shall be provided to allow all animals kept outdoors to protect themselves from direct sunlight.

AWA noncompliance concerns: There was insufficient shade for the bears in the pits at CSBP and CBZ, such that not all were able to protect themselves from direct sunlight.

(b) *Shelter from inclement weather.* Natural or artificial shelter appropriate to the local climatic conditions for the species concerned shall be provided for all animals kept outdoors to afford them protection and to prevent discomfort to such animals. Individual animals shall be acclimated before they are exposed to the extremes of the individual climate.

AWA noncompliance concerns: There was insufficient shelter from inclement weather for the bears in the pits at CSBP and CBZ and the cages at SL, such that the bears were not protected from local climatic conditions and were subject to discomfort.

(c) Drainage. A suitable method shall be provided to rapidly eliminate excess water. The method of drainage shall comply with applicable Federal, State, and local laws and regulations relating to pollution control or the protection of the environment.

AWA noncompliance concerns: There was inadequate drainage in the pits at CSBP and CBZ, in that excess water was not rapidly eliminated, and it appears that the Oconaluftee River may be being polluted with effluent from these two facilities.

Sec. 3.128 Space requirements.

Enclosures shall be constructed and maintained so as to provide sufficient space to allow each animal to make normal postural and social adjustments with adequate freedom of movement. Inadequate space may be indicated by evidence of malnutrition, poor condition, debility, stress, or abnormal behavior patterns.

AWA noncompliance concerns: Poor conditions, stress, and abnormal behavior patterns were prevalent in the captive bears in Cherokee. Normal social adjustments include the ability to seek privacy from cagemates, which these bears were unable to do.

Sec. 3.129 Feeding.

(a) The food shall be wholesome, palatable, and free from contamination and of sufficient quantity and nutritive value to maintain all animals in good health. The diet shall be prepared with consideration for the age, species, condition, size, and type of the animal. Animals shall be fed at least once a day except as dictated by hibernation, veterinary treatment, normal fasts, or other professionally accepted practices.

AWA noncompliance concerns: Food can become contaminated when tossed into puddles, pools, and excrement and handled in an unsanitary manner. It was impossible for employees to determine if each bear was receiving a sufficient quantity of food during uncontrolled public feeding. Little or no consideration was given to age, species, condition, size, and type of animal in a diet that was heavily reliant on uncontrolled public feeding. The diet was not consistent with professionally accepted practices. The nutritive value of high-protein dog food, white bread, sugary drinks, iceberg lettuce, and apples as a regular diet is insufficient for bears to maintain good health.

Sec. 3.131 Sanitation.

(a) Cleaning of enclosures. Excreta shall be removed from primary enclosures as often as necessary to prevent contamination of the animals contained therein and to minimize disease hazards and to reduce odors. When enclosures are cleaned by hosing or flushing, adequate measures shall be taken to protect the animals confined in such enclosures from being directly sprayed with the stream of water or wetted involuntarily.

AWA noncompliance concerns: As a result of the inadequate size of the bear enclosures and the fact that the animals were not shifted into separate cages before the enclosures were hosed down, bears could be exposed to the stream of water or wetted involuntarily.

Sec. 3.132 Employees.

A sufficient number of adequately trained employees shall be utilized to maintain the professionally acceptable level of husbandry practices set forth in this subpart. Such practices shall be under a supervisor who has a background in animal care.

AWA noncompliance concerns: The facilities did not appear to have adequately trained employees, as demonstrated by the false claim of a staff member at CBZ that the facility's bears did not need to hibernate because they were "domestic" bears. Nor did the facilities appear to employ anyone with a background in animal care. Given that zoo professionals dedicate significant resources to providing bears with humane living conditions, environmental enrichment, and nutritional, seasonally appropriate foods, professionally acceptable levels of husbandry practices were clearly not being maintained.

Sec. 3.133 Separation.

Animals housed in the same primary enclosure must be compatible. Animals shall not be housed near animals that interfere with their health or cause them discomfort.

AWA noncompliance concerns: The improper feeding regimen, cramped living conditions, and lack of shelter created a hostile, incompatible environment between dominant and submissive bears who will fight, and have been observed fighting, over limited resources. The USDA's *Animal Care Resource Guide: Exhibitor Inspection Guide*, Sec. 11.2, states that animals housed in the same primary enclosure are incompatible if there is "overly aggressive or vicious behavior" or "access to food, water, and/or shelter [is] restricted by another animal."

RECOMMENDATIONS

In press accounts, representatives of these facilities as well as Cherokee tribal officials have stated that there is no need to make improvements to the captive bear housing and husbandry practices because they are in compliance with the AWA. A review of these facilities' practices, however, reveals that they are indeed in violation of the AWA, but the violations have gone unnoticed or have been insufficiently addressed by the USDA.

There have been significant improvements over the years in the way that zoo professionals house and care for bears, and the federal law and inspection system has not kept up with these changes. For example, environmental enrichment is just as vital to proper bear husbandry as it is to primates, yet the AWA has no provision for environmental enrichment for bears. All bears need pools and dry resting areas, proper shelter, and opportunities to forage, climb, explore, dig, and seek privacy. All bears must be provided with a veterinarian-approved diet. Most bears should also be given the choice to den over the winter.

The USDA currently has an elephant specialist, a primate specialist, a big cat specialist, and a marine mammal specialist, but no bear specialist. The lack of expertise within the agency regarding bears may be a factor in its inability to properly assess conditions for captive bears and ensure that minimum standards are being met. Also, a review of the USDA's inspection history of these facilities indicates that one, and only one, animal care inspector has been solely responsible for inspecting these facilities since 2004. There is a risk that one individual may overlook violations as he or she becomes desensitized to viewing the same conditions over and over. Given the high number of complaints about the captive bears in Cherokee (complaints generated by both tourists and animal protection groups), the agency should consider involving additional personnel in the inspection process to help identify problems that have until now gone unnoticed. Even the four individuals within the investigation team assembled by PETA made several different and important observations based on each person's unique experiences.

The USDA's Animal Care Program states that its mission is "to provide leadership in establishing acceptable standards of humane animal care and treatment and to monitor and achieve compliance through inspections, education, and cooperative efforts." The authors of this report are in agreement that the bear facilities in Cherokee are unacceptable and inhumane. Nothing will make the pits at CSBP and CBZ or the grossly undersized cage for adult bears at SL even remotely livable for these bears. Therefore, it is recommended that:

- The captive bear displays in Cherokee be closed
- The USDA arrange for its animal care inspectors, veterinary medical officers, and supervisory staff to receive training in bear behavior, husbandry, enrichment, training, and veterinary care
- The USDA hire a bear specialist
- The USDA assemble a team of bear experts to thoroughly inspect the Cherokee facilities and ensure that existing laws are being properly enforced
- The USDA promulgate new regulations under the AWA where existing standards fail to ensure that bears are kept in proper and humane living conditions

PHOTOS



01A This photo shows the lack of safety barriers around the bear pits at Chief Saunooke Bear Park (CSBP).



01B This photo shows the inadequate safety barrier at CSBP.



01C This photo shows the lack of safety barriers around the bear pits.



02A A rusty door at CSBP



02B The photo on the left shows a dangerous hole in the concrete beneath the cub. At right, the flimsy metal dish attached to the door buckles under the cub's weight.



02C A cub climbs the door at CSBP (left). The photo on the right shows dirty water in the metal dish and a dangerous hole in the concrete.



02D This empty, bent metal water dish at CSBP might cut the bear's feet if it cracks.



02E Cracked concrete at Cherokee Bear Zoo (CBZ)



02F The wall in this pit at CSBP is cracked and crumbling. The bear was off-exhibit during repairs.



03 There was only one shelter for two bears in some of the pits at CSBP.



04 This photo shows that the bear pits at CBZ have inadequate shelter and lack appropriate shade.



05 An obese black bear at CBZ sitting on wet concrete



06A Effluent from the bear enclosures at CBZ may be flushed directly into the Oconaluftee River through these drainage pipes (photos from EasternBand.com).



06B Raw sewage from CSBP may be draining into the river.



07A Bear feces at CSBP is similar to feces observed in each facility. The uniformity in color and consistency indicates a diet of almost exclusively dog chow.



07B Normal bear scat showing signs that the bear's diet included (from left to right) grass, berries, and birdseed



07C A cub at Santa's Land (SL) is given a drink made from refined sugars.



08A This photo shows a filthy PVC food delivery pipe at SL.



08B Interior view of the filthy PVC food delivery pipe at SL



08C The paper food trays are recycled and presumably re-used (left). A staff member does not wear gloves while preparing food (right).



09A The right front forepaw of a black bear at CBZ shows wear points in the center of each toe pad.



09B The central footpad on the right front paw of this bear at CBZ has a deep crack and wear point.



09C Apparent forepaw lesions on a black bear at CSBP (left) and a grizzly bear at CBZ (right)



09D Cracks in the rear footpad of a grizzly bear at CBZ (left) and a normal footpad (right)



09E An Asiatic black bear at CSBP shows a pink area on the rear left footpad that may indicate a wear point.



10A Excessively worn claws on a black bear at CBZ



10B Excessively worn claws on a grizzly bear at CBZ



10C Normal claws on a grizzly bear (left) and a black bear (right)



11A Obese Asiatic black bears at CSBP



11B Obese black bear at CSBP



11C A lean bear at CBZ



12A The smaller grizzly at CSBP had lost both lower canine teeth (notice how the lower lip folds in over the remaining lower teeth in the photo to the right). It appears that she may have an abscess in the cavity where the lower-left canine tooth used to be. There seems to be unhealthy yellowish tissue in that location instead of normal-looking gum tissue.



12B This grizzly bear at CBZ has normal lower canine teeth (for comparison to the one described above) but demonstrates the increased level of calculus buildup seen in captive bears on inappropriate diets.



12C The lower-right canine teeth of the grizzly bears named Marge and Elvis at CBZ have been worn or fractured down to the pulp cavity. The black areas inside the tooth are pulp cavity and dentin.



12D A black bear (left) and an Asiatic black bear (right) at CSBP with moderate calculus buildup on their teeth



13 The dull haircoat and the missing hair around the perianal region suggest internal parasites such as roundworm (CSBP left, SL right).



14A This Asiatic black bear at CSBP has a moist dermatitis on his chest.



14B This bear at CSBP has not shed out properly because there is a lack of appropriate surfaces to rub against.



14C This grizzly at CBZ has an apparent rub wound adjacent to the left eye.

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