AMERICAN BLACK BEAR:

a comparison of husbandry and housing practices

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for

Zoocheck Canada Inc.
World Society for the Protection of Animals
Ontario Zoo Working Group

www.zoocheck.com

February 2000

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INTRODUCTION

This review of American black bear husbandry and housing conditions was prompted by the passage, in early 1999, of the new Fish and Wildlife Conservation Act (FWCA) in the Province of Ontario, Canada. Until passage of the FWCA, Ontario had no legislation governing the keeping of native or exotic wildlife species in zoos, wildlife parks and roadside menageries. The FWCA allows for the creation of regulations governing the keeping of wildlife in captivity, including standards for wildlife care and accommodation.

Overall, the care and accommodation provided for black bears in Ontario's captive wildlife facilities has been appallingly substandard. With few exceptions, little attention has been paid to the spatial and physical requirements of bears, and even less to their psychological needs. Many bears have lived out their lives in tiny, barren enclosures, pacing endlessly back and forth; their custodians lacking the capacity or motivation to house and care for them properly.

During the last few decades, knowledge of the biology and behavior of many wildlife species has increased substantially. With that increase has come a substantial shift in public attitudes toward wildlife in captivity. Most members of the public no longer find it acceptable to confine animals in substandard conditions that fail to satisfy their needs.

We hope the information contained in this review will assist in the development of standards that satisfy the biological and behavioral requirements of captive American black bears in the Province of Ontario and other jurisdictions. We also hope that zoological facilities now housing bears in substandard conditions will look at the examples provided in this report and use them as models for change.

Nadja Lubiw-Hazard, DVM

PREAMBLE

General considerations in enclosure design

Enclosures that are designed and constructed with little or no consideration of the biological and behavioral needs of the animals, rarely, if ever, provide an appropriate quality of life. The provision of complex, variable environments that stimulate physical and mental activity within an appropriate social context is extremely important.

Like their wild conspecifics, captive wild animals need to engage in a variety of behaviors such as seeking shelter, nest sites, mates and food resources; avoiding predators and parasites; defending territories; and exploring new spaces. Most captives are, to a large degree, denied the opportunity to engage in these kinds of "natural" behaviors. This denial may be severely detrimental to animal well-being.

Most progressive zoological facilities now recognize that confining animals in sterile, undersized, biologically irrelevant enclosures compromises animal welfare and is counterproductive from an educational and research standpoint. If wild animals are to be kept in captivity, they must be provided with environments that satisfy their specific biological and behavioral needs.

If an animal spends a great deal of time searching for food in the wild, or marking and defending a territory, the restriction or loss of this activity in captivity must be compensated for. If the activity cannot be replicated or replaced, the captive must be encouraged to engage in other types of activity. For some animals, this can be accomplished through the development and implementation of a program of environmental enrichment.

At its most basic level, environmental enrichment is an attempt to identify and recreate specific factors in an animal's natural environment that are required for its psychological well-being. In captivity, this typically means providing animals with a broader range of behavioral opportunities and more control of their lives than would otherwise be available.

The importance of environmental enrichment is clearly misunderstood by many zoo, wildlife park and menagerie operators. Statements such as, "I threw a ball in the cage last week and he's never used it" or "It's not my job to entertain the animals" are common.

Enrichment is far more involved than simply providing an object or two for animals to play with or manipulate. Creating a changing captive environment that motivates and challenges animals, and gives them a measure of control over their daily activities requires research, planning and commitment.

One of the best ways of ensuring an "enriched" environment for many captive wildlife species is through the provision of a suitably sized, "naturalistic" enclosure where animals can engage in a range and diversity of "normal" behaviors.

Enclosures

An enclosure is defined as any accommodation provided for animals in zoos. The 1994 Canadian Association of Zoos and Aquariums (CAZA) *Standards for Animal Care and Housing* state that,

Animal enclosures in which animals are on public display should:

a) Be of a size which enables the animals to:

1) exercise natural behavior to facilitate public education and interpretation;

2) achieve a distance from the public and other specimens at which the animals are not psychologically or physically stressed;

3) achieve a full range of body movements and physical movements normally performed.

b) Contain furniture and/or procedures to physically and psychologically enrich the environment and stimulate normal physical movement and behavior

c) Contain natural or man-made shelters enabling the animals to protect themselves from natural conditions (eg. sun, rain and snow).

The *European Association of Zoos and Aquaria standards for the care and accommodation of animals in zoos* state that:

3. Animals to be provided with an environment, space and furniture sufficient to allow such exercise as is needed for the welfare of the particular species.

4. Enclosures to be of a sufficient size and animals to be so managed:

a) to avoid animals with herds or groups being unduly dominated by individuals;

b) to avoid the risk of persistent and unresolved conflict between herd or group members or between different species in mixed exhibits;

c) to ensure that the physical carrying capacity of the enclosure is not overburdened;

5) to prevent an unacceptable build-up of parasites and other pathogens.

Enclosure Size

The American Zoo Association publication *Zoological Park and Aquarium Fundamentals* (1982) states the following about space requirements for captive animals,

First, it would be of more than academic interest to investigate what is known about the species' home range or territory, not only to give the planners an idea of the extent to which they will be compressing the species' natural living space, but also to enable them to create a similar environment.

The next step is to investigate the size of existing exhibits for the species in other zoos. Examine not only those which are successful, but also those which by your criteria are unsuccessful. Learn from them all. Talk to the staff, including the keepers assigned to the area. Identify mistakes so they are not perpetuated.

Good enclosure design is rooted in consideration of the biological and behavioral needs of the animals. The design should incorporate sufficient space to facilitate normal movements and a

range of natural behaviors, as well as adequate space for members of the public who come to view them. The provision of an appropriate amount of space, along with factors impacting on animal well-being, at the design stage will help ensure an acceptable quality of life for the captive and prevent animals from constantly searching for escape routes.

Cage Construction

According to Joseph Flanagan and Lou Tsipis in *Wild Mammals In Captivity, Principles and Techniques* (1996),

All enclosures should be constructed of durable materials that can withstand the impact and manipulation attempts of the enclosed animals. Particular attention should be given to fasteners and to all areas where dissimilar materials meet. Even the heaviest construction materials can hold only as securely as the fasteners used to attach them to the support structure.

Enclosures must be designed and constructed with the physical abilities and specific needs of the animals in mind. Failure to do so may result in unsafe, potentially dangerous situations.

Cage Furniture

In addition to structural features incorporated into exhibits at the design/construction phases, there are a multitude of other methods and strategies that can be employed to enrich the lives of captive animals. Some of these, such as enclosure furnishings, are often part of an environmental enrichment program (described above).

The provision of appropriate enclosure furnishings is an extremely important factor in addressing the needs of captive wild animals. All enclosures should be equipped with furnishings that encourage animals to become active by engaging in a range of natural behaviors. Lack of activity can lead to a variety of physical and behavioral problems, such as loss of muscle tone and general fitness, and the development of abnormal behaviors (i.e. stereotypic pacing, lethargy, hyper-aggressiveness, etc.). Quality of space, accomplished in part through enclosure furnishings, is a core requirement for animal well-being.

Natural items such as small trees, shrubs, logs with intact bark and leaves, stumps, hillocks, rock piles, earth mounds, deep litter, sand boxes, streams, ponds and pools, and other features can be incorporated into many exhibits increasing their complexity and making them more interesting for the animals. Artificial items can supplement natural features.

In addition to increasing activity, furnishings may also provide other benefits such as the provision of shade, and hiding spots for animals that wish to remove themselves from the view of the public or each other.

Flat, featureless enclosure substrates for most animals are not optimal. Varied topography - "landscape realism"- within the enclosure will increase utilizable ground surface area and create new behavioral opportunities for the animals. Substrates should not be barren or hard.

Utilization of vertical space is another important consideration. While this may not be a critical factor in the housing of wolves, elevated vantage points may provide a previously unavailable behavioral opportunity. Platforms should not be high enough to cause injury if the animals should inadvertently fall.

Privacy and Shelter Areas

All captive wild animals, regardless of how they have been raised, should be provided with the opportunity to remove themselves from the view of the public and each other. Close proximity to visitors or other animals with no opportunity for escape can lead to excessive levels of stress.

Food and Water

The provision of sanitary, species-specific food presentation and potable, drinking water is extremely important. Feeding and watering protocols should be incorporated into a program of environmental (behavioral) enrichment.

Providing potable drinking water, quality feed and appropriate presentation is an important consideration in wild animal husbandry.

Safety

According to Flanagan and Tsipis in *Wild Mammals in Captivity, Principles and Techniques*,

A well-planned, effectively managed security program that protects the public, the zoo's employees, the animals, and the facilities should be a primary objective of all zoos...
The key to an effective security program is prevention. Problems can be avoided through effective planning.

Every aspect of a zoological facility should be planned with the safety of the animals, the staff, and the public in mind. Failure to do so may result in animal escapes, and/or animal or human injury or death.

All enclosures should be designed and constructed with careful consideration of the physical abilities of the animals to be contained. They should be constructed in a solid manner with materials able to withstand the full brunt of the captive, even in exceptional circumstances (i.e. when the animal is severely stressed).

All support posts for enclosures and fences must be solidly secured, and all fencing must be properly affixed to support posts and trusses. Additional cross posts should be placed on the lower levels of enclosure fencing as reinforcement when required, and the bottom of each enclosure should be anchored to the ground at two foot intervals. Wooden support posts should not be exposed to animals, which have the ability to tear, chew or damage them in some other way. They should also be resistant to deterioration due to urine, disinfectant materials, and weather.

Enclosures housing animals, which have a known ability to jump or climb barriers, should be enclosed overhead.

Enclosure gates should be solidly constructed and be able to be secured in a manner appropriate to the species being contained. Gates and doorways should tightly abut fences and support structures, and when closed, should not be warped or leave inviting gaps on the sides, top or bottom.

All barriers should be in good repair with damaged, rusty or broken sections or pieces repaired or replaced. Protrusions and jagged pieces of fencing and exposed nails should be removed or covered immediately.

Enclosures housing potentially dangerous animals should be designed and constructed so that the animals can be moved to a secure secondary containment area prior to staff entering the enclosure. Entry points should be through a set of double gates, so that the first gate can be opened and locked before the second gate into the actual animal enclosure is opened. All entry points and gates should be padlocked when not in use.

Night quarters may be required to secure potentially dangerous animals at times when staff supervision is minimal (i.e. nights and weekends). Night quarters should be carefully designed with the biological and behavioral needs of the animals considered.

Any animal enclosure in a public area must be equipped with stand-off barriers at least four feet in height and a minimum of six feet away from the cage. Stand-off barriers keep visitors a safe distance from the animals and protect the animals from poking and prodding visitors.

Warning signs should be placed on or in front of enclosures housing potentially dangerous animals.

Ideally, a perimeter fence should surround the entire zoological facility. According to Flanagan and Tsipis in *Wild Mammals in Captivity, Principles and Techniques*,

The zoo perimeter should be fenced to prevent unwanted entry by humans and other animals. The fence should have a minimum height of 2.5 m and be constructed of material that will discourage climbing by people and wild animals. The bottom should be buried at least 0.25 m deep, or firmly attached to slab or curb, to prevent burrowing through by packs of wild dogs and other wildlife.

The Canadian Association of Zoos and Aquariums (CAZA) *Standards of Animal Care and Housing* (1994) state,

A complete barrier, natural or man-made perimeter fence, must exist around the animal enclosures which protect the animal collection from direct exposure to the non-visiting public and exposure to feral or domestic animals. The level of security required will vary according to the species in the collection and the proximity of the institution to populated areas, agricultural land and to sensitive wildlife habitat. (Recommended minimum barrier should be the equivalent of a 2 meter high, chain-link fence).

Perimeter fencing is required for a zoo to receive accredited status from the CAZA.

A Discussion of Stereotypic Behavior

[The following section has been included in this report because many captive black bears in Ontario exhibit stereotypic behaviors. It was written by Samantha Scott, MRCVS]

Stereotypic behavior is an expression that is too easily used and, even in its proper usage, subject to debate. There have been various definitions of stereotypic behavior:

Repeated, relatively invariate sequence of movements that has no obvious purpose.(Broom)

The prolonged, obsessive performance of apparently purposeless activity. (Webster)

It is a form of behavior that occupies the animal for most of its periods of activity without any apparent normal stimulus bringing it into operation. (Jordan and Ormrod)

The words "ritualized" and "clockwork-like" have been used to describe these behaviors.

The salient points are that the behaviors:

a) do not occur in the wild
b) are repetitive
c) are apparently functionless.

I offer the following as a partial explanation of how I might come to a decision about whether or not a given animal were displaying stereotypic behavior. One might, for example, see an animal that is pacing up and down the perimeter fence of its enclosure. Simply to draw the conclusion then that the animal is displaying stereotypic behavior from the description would be wrong. It may be a displacement activity just prior to feeding; it may even be the first time that the animal has displayed that behavior. However, if one then examines the animal's environment, and its immediate history, one might glean perhaps the fact that feeding time is not for another few hours and evidence that there is a well-worn path along the fencing where the animal is now pacing. Add to this the ease with which the animal is distracted from its activity and how soon it returns to it and one can start to draw conclusions about the behavior. Additional evidence such as expression, the way the feet are placed, certain movements of the head and neck that are common to many animals displaying stereotypic behaviors, means that an experienced eye can quickly fit the available information together.

The expression "obsessive-compulsive" has also been used although arguably this is misleading because it is a term drawn from human psychiatry. Although obsessive-compulsive disorders (OCDs) are referred to throughout the literature on companion animal behavior problems, we can neither say with certainty that the patient is obsessed nor feels a compulsion in the way we would normally understand it. Since some obsessive-compulsive disorders are thought to stem from a lack of self-esteem and problems with self-image, the term is inappropriate for the behavior with which we are dealing.

Stereotypic Behavior vs. Displacement Behavior

Stereotyped behavior should be distinguished from displacement behavior with which it could be confused by the uninitiated. Displacement behavior usually occurs when an animal (or human for that matter) is frustrated in its aims (e.g., to obtain food or to win a confrontation). The behavior may be unrelated to the original aim (e.g., grooming, scratching or pacing) and its purpose would appear to be an attempt to reduce the feelings of conflict and frustration.

Many dogs will chase their tails in response to excitement or anxiety. Nevertheless, it is only when the stimulus cannot be discerned, when the behavior continues relentlessly, interferes with the animal's normal behavioral repertoire, cannot be easily interrupted and is rapidly resumed that the behavior is said to have become stereotyped.

It is probable by extending the argument that a displacement activity helps to relieve frustration and conflict, and by the discovery that endorphins are released in animals who are performing stereotypies, that the suggestion arose that these behaviors were a way of coping for the animal and were therefore not necessarily a "bad thing." Indeed, the argument has run that with the release of natural opiates the animal is even "happy" in its activity, as though on some kind of "high." The fact that endorphins are released when the body is under a stressful stimulus such as pain reverses this line of thinking.

The discussion is still based upon whether or not stereotypies are a sign of:

a) conscious distress
b) an indication that the animal is coping with its lifestyle
c) mental disturbance.

Lawrence and Rushden (1993) conclude that "abnormal or stereotypic behavior is an indication of chronic suffering caused by frustration, boredom, depression, and anxiety" but that they may be a form of "coping". The difficulty with the term "coping" is that it can imply that an animal or person is dealing successfully with its new situation, by whatever means. However, while an animal or person is busy coping, they find it increasingly difficult to cope with other challenges, such as infection, temperature changes, conflict within a group, etc. And however one regards the arguments, the bottom line isthat these behaviors are produced as a result of an unsatisfactory environment/husbandry and that some degree of mental suffering has occurred along the way.

There is one more significant, but frequently overlooked, behavioral change. While some animals (and humans) express their frustrations and conflicts in the performance of outwardly recognizable behaviors, it should be remembered that inactivity and lethargy could also be signs of a depressive mental state. Beyond this is what the psychologists term "learned helplessness."

Here it is worth quoting what John Webster has to say about this state, in his *book A Cool Eye Towards Eden*:

...a loss of responsiveness to stimuli in animals, acquired after long periods in which they have been denied the opportunity to perform constructive behaviors designed to achieve pleasure (e.g. food) or avoid pain (e.g. electric shocks). This is sometimes described as an adaptive response an interpretation which I find chilling. Learned helplessness defines the state of mind in which an animal has given up. I prefer to call it hopelessness.

AMERICAN BLACK BEAR FACTS

Although the American Black Bear is in the order Carnivora, most of its diet consists of vegetation, including twigs, buds, leaves, nuts, roots, fruit, berries and newly sprouted plants. They also eat insects, fish, small mammals and other vertebrae. They spend most of their waking hours searching for food.

These bears are found throughout North America in forested areas. Females live in designated territories that they often share with their cubs and female sub-adult offspring. Males tend to be solitary except in breeding season. A bear may occupy a home range of 20-25 sq. km.

The American black bear possesses a keen sense of smell and eyesight almost as good as humans. Their powerful legs and feet are adapted for digging and ripping apart logs. They climb trees for protection or food. They are also powerful swimmers, and wade in streams and lakes to catch fish.

In the fall, the bear puts on a good supply of fat then holes up for the winter in a sheltered space such as a cave, crevice, hollow tree or log; the bear emerges in the spring.

Bears mate in early summer, and litters are born in January – February. Females mate during their third years, usually producing one cub the first winter, two on subsequent breedings. Cubs nurse for about a year during which time the female is not receptive to males.

METHODOLOGY

In a random phone survey, seven zoological facilities were identified by peers as providing an above average level of care and accommodation for captive American black bears (*Ursus americanus*).

These facilities were approached by e-mail, fax and/or telephone and requested to participate in a comparative analysis of black bear husbandry and housing practices by providing information listed in the categories listed below. Where possible, the original wording submitted by study participants has been used.

In addition, the *EEP Ursid Husbandry Guidelines* and the Ursid standards contained in the American Zoo and Aquarium Association's *Minimum Husbandry Guidelines for Mammals*, have been included (the Canadian Association of Zoos and Aquariums (CAZA) does not have a comparable set of standards), as have the relevant sections of the Manitoba *Guidelines for Keeping Wildlife in Captivity* (1984) and the Newfoundland *Guidelines for Facilities Holding Captive Wildlife*.

Information categories

Social grouping (*e.g., single, pair, family, pack.*)

Number of animals in enclosure

Enclosure type (*e.g., open paddock, fenced natural area, island*)

Enclosure shape (*e.g., rectangular, square, circular, irregular*)

Enclosure size
- length
- width
- height
- Total surface space per individual/pair

Barrier type (*e.g., dry moat, wet moat, wall, fence, net, glass, hot wire*)
- Gauge (for fencing only)
- Height
- Depth (if buried)

Substrate *(e.g., natural ground, concrete/gunite, natural rock, gravel bed, earth, wood floor*)

Environmental conditions
- Shade
- Shelter (e.g., overhead rain/snow guards, windbreaks [not including sleep/rest/shelter areas as described below])
- Temperature
- Humidity
- Ventilation
- Lighting

- Water Quality

Indoor accommodation
- Dimensions (length, width and height)
- Total indoor surface space available to animals
- Total surface space per individual/pair

Enclosure furnishings (*outdoor and indoor*)
- Natural fixed features (e.g., large trees, rockwork, hills, streams, ponds)
- Artificial fixed features (e.g., platforms, concrete pipes, concrete pools for bathing/drinking])

- Other natural features (e.g., small trees, shrubs and ground plants, logs, stumps)
- Other artificial features

Sleep/rest/shelter area (*e.g., wooden box, underground den, concrete pipe, trees and natural cover, burrows, indoor facility*)

Privacy area/visual baffles (*e.g., fencing, tree cover, netting, landscaping [hills, gullies], rock piles)*

Environmental enrichment (*outdoor and indoor*)
- Consummatory (e.g., whole carcasses, commercially prepared food items, dog biscuits, eggs, insects, live fish, etc.)

- Non-consummatory (e.g., rawhides, feed tubes, hollow logs, branchwork, scents for olfactory stimulation, etc.)

Food and water
- Type
- Amount
- Frequency of feeding
- Presentation (e.g., in designated feeding area, scattered throughout exhibit, in containers)
- Fresh drinking water available
- Are containers non-tippable

Staff and public safety and security
- Double door entry system
- Secure secondary containment area
- Public stand-off barriers
- Perimeter fence

Veterinary care requirements
- Fecal exams
- Vaccinations
- Other

Other requirements
- Enclosure cleaning (e.g., frequency)
- Hard surfaces (are they disinfected)

- Other miscellaneous

PARTICIPATING INSTITUTIONS

Aspen Valley Wildlife Sanctuary
Rosseau, Ontario, Canada

Bear With Us
Sprucedale, Ontario, Canada

The Greater Vancouver Zoo
Aldergrove, British Columbia, Canada

International Bear Foundation
Ouwehands, Netherlands

Jardin Zoologique De St-Felicien
St-Felicien, Quebec, Canada

Magnetic Hill Zoo
Moncton, New Brunswick, Canada

North Carolina Zoological Park
Asheboro, North Carolina, USA

NUMBER OF ANIMALS, SOCIAL GROUPING & TOTAL ENCLOSURE SIZE

Aspen Valley Wildlife Sanctuary

2 adult bears (permanent residents) and 4 cubs (to be released)
Three enclosures: 3 acres, 5 acres, and 7 acres

Bear With Us

3 adult bears in one enclosure; 3 separate enclosures housing 2 – 10 yearlings
Yearling enclosures: 200 sq. ft., 360 sq. ft., and 450 sq. ft.
Adult enclosure is 40,000 sq. ft.

Greater Vancouver Zoo

6 bears (3 females and 3 males) share exhibit with 9 wolves
405,000 sq. ft. enclosure

International Bear Foundation

11 bears share the exhibit with 6 wolves.
The enclosure is 20,000 sq. m.

Jardin Zoologique De St-Felicien

15 bears (7 male, 5 female, 3 unknown sex) share the exhibit with 10 other species – moose, white-tailed deer, elk, bison, musk ox, geese, prairie dogs, bighorn sheep, caribou, and rocky mountain goat.
The enclosure is 800 acres (325 ha)

Magnetic Hill Zoo

Animals are grouped in pairs or trios
3 bears occupy the exhibit
The enclosure is 28,000 sq. ft. (200 ft. x 140 ft.). The indoor space is 12 ft. x 24 ft. x 8 ft. high.

North Carolina Zoological Park

3 bears (1 male, 2 female)
16,000 sq. ft. enclosure. The indoor holding yard is 30 ft. x 34 ft.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Bears can be kept singly. They may be housed in pairs, or in larger groups containing a single male. Expectant females should be moved to isolated cubbing dens prior to birth.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

No more than two compatible individuals or a female with cubs should be held per pen. Subadults and adults are kept separately.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

No specific requirement or recommendation regarding social grouping or number of animals.

EEP Ursid Husbandry Guidelines

Only one animal, a single sex group or one non-reproductive pair should be kept in one enclosure.

The guidelines also provide information related to group composition, age at group foundation/group changes, timing of changes in group composition, procedure for introducing new group members, and re-introducing a mother and cubs to conspecifics.

ENCLOSURE TYPE, SHAPE & SIZE/BEAR

Aspen Valley Wildlife Sanctuary

Fenced natural area
Irregular shape
Minimum of 1 acre/bear (4032 sq. m/bear)

Bear With Us

Fenced natural area
Rectangular shape
1239 sq. m/bear

Greater Vancouver Zoo

Fenced natural area
Basically rectangular in shape (900 ft. x 450 ft.)
6271 sq. m/bear

International Bear Foundation

Fenced natural area
Rectangular shape, divided into 2 sections which are connected by tunnels and concrete tubes.
1818 sq. m/bear

Jardin Zoologique De. St-Felicien

Fenced natural area
Irregular shape
215,054 sq.m/bear

Magnetic Hill Zoo

Fenced natural area, with an indoor enclosure
Irregular shape
867 sq. m/bear

North Carolina Zoological Park

Fenced natural area, with an indoor holding yard
Square shaped exhibit
495 sq. m/bear

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

300 sq. ft.(9.2 sq. m) per individual/pair

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

40 sq. m per adult or 60 sq. m per pair
20 sq. m per offspring/additional animal

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

4,500 sq. m per pair
2,000 sq. m per additional animal

EEP Ursid Husbandry Guidelines

The best enclosures for captive bears take the form of large natural enclosures.
No numerical value for optimum enclosure size is recommended. The enclosure should have enough room for all the recommended furnishings. The animals should have a choice of structures, vegetation and substrates and be able to maintain their distances from one another when using them – this will require considerable space. The specifics for several exemplary natural bear enclosures are included in these guidelines, and exhibit size for the American Black Bear range from 80,000 – 200,000 sq. m.

ENCLOSURE BARRIER & SUBSTRATE

Aspen Valley Wildlife Sanctuary

8 ft. chain link fence with 3 ft. flat steel (16 gauge or 18 gauge) at the top. 6 ft. chain link fence buried or weighted on the ground. Framework of 6 ft. wooden posts or timbers with crossbars bolted together.

All natural substrate (ground, rock, meadow).

Bear With Us

8 ft. fencing (6 and 9 gauge) with an additional 4 ft. buried. The top is hot-wired in certain situations.

Natural ground substrate.

Greater Vancouver Zoo

8 gauge black vinyl coated chain link fence is 12 ft. high and is buried to a depth of 1-2 ft. A 4 ft. chain link apron extends inward buried to a depth of 1-2 ft. to prevent escape by digging. Solar powered hot wire at top, and additional hot wire four feet above ground on interior side of fence to prevent climbing.

Natural ground substrate. ¼ open meadow, 1/8 blueberry, blackberry, raspberry and willow, marsh-like area, 1/8 water, and ½ wooded area with numerous large cedars, cottonwood, vine maple, and other naturally occurring vegetation.

International Bear Foundation

The enclosure is double fenced. The outer fence is 3.5 m, and the inner fence is 2.5 m. The fence is hot-wired at 1 m. On the internal fence and the hot wires there are fixed electric wires.

Natural substrate – soil, rocks, ground.

Jardin Zoologique De St-Felicien

9 gauge fencing to a height of 10 ft. surrounds the exhibit. The fencing is buried to a depth of 3 ft.

Natural ground substrate.

Magnetic Hill Zoo

A dry moat surrounds the enclosure. An 8 ft., 6 gauge chain link fence with a 3 ft. overhang is also present. The fence is buried to a depth of 3 ft.

Natural ground substrate.

North Carolina Zoological Park

6 gauge fencing 10 ft. high, with a 4-ft cantilever. Re-bar driven 2-3 ft deep at base of fence and then welded together.

Natural ground substrate. The indoor area has a concrete floor with straw and shavings for bedding.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Moats, thick laminated safety glass or bars should be employed. Dry moats should be at least 12 ft. (3.7 m) wide and 12 ft. (3.7 m) deep. Safety glass should be at least 2 in. (5 cm) thick. Vertical walls should be at least 12 ft. (3.7 m) high.

No requirement for substrate type.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

Walls should be at least 2.6 m high. Pen floors must be concrete 10 cm thick.

No requirement for substrate type.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

Barriers must be 3 m high.

No requirement for substrate type.

EEP Ursid Husbandry Guidelines

The total height of the barrier, including a 0.5 m overhang of smooth material or electric wires must be 3.8 – 4.0 m. A variety of barrier types may be used such as dry moat & barred fence, water moat & walls, walls & windows, glass & walls, welded mesh fencing, chain link fencing, or barred fencing. Because bears are able to dig for several metres the substrate must be secured in one of the following fashions: concrete wall 1-2 m deep, metal rods driven 10 cm deep into solid rock, or horizontal net to a depth of 30 cm into the soil.

Natural ground vegetation is the best substrate. Areas should be provided which contain various materials such as dry leaves, hay, straw, wooden shavings or wood chips.

ENVIRONMENTAL CONDITIONS (shelter, shade, temperature, humidity, ventilation, lighting)

Aspen Valley Wildlife Sanctuary

Outdoor enclosure so environmental conditions not regulated.
Shade provided by natural cover.

Dens are constructed of 4x4 posts or lumber, with straw, leaves or evergreen branches for bedding. Dens are 3 sq. ft.

Bear With Us

Outdoor enclosure provides natural environment.
Trees provide shade.

Wooden den boxes provide shelter.

Greater Vancouver Zoo

Outdoor enclosure provides natural environment.
Trees provide shade.

No dens are provided; bears have dug dens in hillside and under naturally occurring stumps.

International Bear Foundation

Outdoor enclosure provides natural environment.
Trees provide shade.

7 concrete tubes are located in the forests, which the bears can use for shelter.

Jardin Zoologique De St-Felicien

Outdoor enclosure provides natural environment.
Trees provide shade.

The bears have dug their own underground dens.

Magnetic Hill Zoo

Outdoor enclosure provides natural environment.
Lots of mature trees provide shade.

There is an underground den and a bear house for shelter.

North Carolina Zoological Park

Outdoor enclosure provides natural environment. The indoor enclosure has fluorescent lighting, fans, and ambient temperatures.
Trees and natural cover provide shade.

There is an indoor holding yard, and 4 dens (8 ft. x 8 ft. x 10 ft. high) with concrete floors and wire mesh sides.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Bears can be maintained outdoors year-round. There must be enough shade to accommodate all individuals housed within the enclosure at the same time. Indoor enclosures should be ventilated by natural or artificial means to provide a flow of fresh air. If indoor facilities are used, incandescent or fluorescent lighting is a good source of illumination.

Indoor enclosures should measure at least 1.5 m in width, depth, and height. A separate holding area should be available for each animal.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

Shade should be provided in 25 – 50 % of the enclosure.

Dens of wood, concrete or cement block should be 1.3 m high, 2 m wide and 2 m long per animal. A den 1.2 m high, 2 m wide and 1.7 m long is required for one adult and her offspring. Dens must have floors of concrete or a surface covered with fibreglass. Walls should be coated with an impervious substance for sanitation. Den entrances should be 1.2 m high and 1 m wide. Adequate ventilation is necessary in the roof or back of the structure to prevent condensation and to provide air circulation. Shade is to be provided by covering dens.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

General provision: No person shall fail to provide for captive wildlife: adequate shelter for use in times of inclement weather or to avoid sunlight; adequate facilities for an animal to rest or retreat from people or fellow exhibit mates; living quarters that maintain a temperature suitable for their biological needs.

Den enclosed on all sides except for opening large enough to allow entry and exit. Large enough to hold all animals in enclosure but not so large to allow excessive loss of body heat. Den to be at least one foot off the ground or, if not, then thus positioned to prevent water drainage into it.

EEP Ursid Husbandry Guidelines

All ursid species must have access to cool shady places during hot summer days.

Dry, sheltered areas must be provided. This can be achieved by shrubs and trees, hills, horizontal wooden logs, large roots, sewer pipes, rocks, caves in rocks, old barrels, or large boxes.

ENCLOSURE FURNISHINGS, ENRICHMENT, PRIVACY & AQUATIC SPACE

Aspen Valley Wildlife Sanctuary

Variety of natural features, such as claw logs, climbing branches, and rotten logs are provided.

Further enrichment is provided through food (fruits, vegetables, berry bushes).

Trees, rocks and caves allow for privacy areas.

Natural aquatic area is provided with ponds and flowing water.

Bear With Us

All furnishings are natural –trees, plants, rocks, ponds, logs, stumps.

Food items (fruits, vegetables, seeds, and natural browse) provide further enrichment.

Privacy areas provided by tree cover.

Natural ponds provided.

Greater Vancouver Zoo

No artificial furnishings are provided.

All enrichment is provided through natural features (trees, dirt substrate, berry bushes, grass).

A large area with varied terrain (rolling hills, trees, and willow thickets) provide opportunity for social withdrawal.

Aquatic areas include one irregular shaped pond (140 ft.x250 ft.) with a central island, and a stream-draining pond (10 ft.x160ft.).

International Bear Foundation

Concrete tubes are provided for sleeping. All other features are natural forest features.

Further enrichment is provided with a natural feeding program. No artificial items are provided for enrichment.

There is a naturally occurring pond 1.5 m deep and approx. 40 sq. m. There is also a 50 m river with 2 waterfalls that is 2m wide and 75 – 125 cm deep.

Jardin Zoologique De St-Felicien

All features are natural. There are large and small trees, shrubs, ground plants, rockwork, logs, stumps, hills, streams, and ponds.

Further enrichment is provided by feeding apples, carrots, natural browse, live fish, bread, and eggs scattered throughout the exhibit. The bears cohabitate with 10 other species which also creates an enriched environment.

Privacy areas provided by natural cover, trees and natural underground dens.

There are naturally occurring streams, ponds, lakes and a river.

Magnetic Hill Zoo

All features are natural. There are large trees, rockwork, hills, streams, ponds, small trees, shrubs, ground plants and logs.

Further enrichment is provided by scattering food items through the exhibit such as fruits, vegetables, seeds, dog biscuits and eggs. Boomer balls are also provided.

Natural features such as fallen trees, hills, and gullies create privacy areas.

There is a pond in the exhibit that is 30 ft x 40 ft x 4 ft deep.

North Carolina Zoological Park

Outdoor enclosure has all natural features. There are trees, rotten logs, branchwork and stumps.

The indoor area has boomer balls, keg barrels, rawhides, tires, feed tubes, traffic cones, coniferous tree piles and hollow logs. Fruits, vegetables, seeds, peanut butter, pasta, honey and dog biscuits are scattered throughout the exhibit twice daily.

Privacy is provided by tree cover as well as by indoor dens.

There is a 10 ft. x 32 ft. pool, which is 6 ft. deep, fed by a recirculating pump and a 50 ft. stream.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Shelves or pallets for sleeping should be provided.

Modification of feeding routines by changing the time of feeding as well as by hiding small food items within the enclosure will enrich the bears' environment. Supplemental feedings (vegetables, fruits, browse, rawhide dog bones, and live or fresh fish) may be delivered at any time to keep the bear active. Food may be finely chopped and scattered/hidden throughout the enclosure, frozen in a block of ice, or enclosed in containers that can be manipulated. Bears may also be provided with objects to manipulate or explore such as traffic cones, boomer balls, heavy rubber buckets, etc. Because bears enjoy digging, patches of bare soil or grain husks may be added for novelty as well as an additional area for hiding foods.

Visual barriers such as logs or boulders should be added to enclosures housing more than one animal.

A pool with a mean horizontal diameter of at least 6 ft. (1.8 m) and a surface area of at least 64 sq. ft. (6 sq. m) should be provided for two adult bears. The pool should be at least 3 ft. (1 m) deep, both dimensions excluding entry and exit areas. For each additional animal, the surface area of the pool should be increased by 30 sq. ft. (2.7 sq. m), all of which should be at least 3 ft. (1 m) deep.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

General provision.

For captive wildlife, accommodations must approximate natural conditions in physical appearance and duplicate their functions. All animals require physical exercise. Provisions must be made to provide captive wildlife with suitable opportunities to exercise.

Every animal requires privacy, including an opportunity to retreat from the sight of humans and other species.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

Claw logs (tree trunks, logs, etc.) of sufficient size and number to allow for proper claw exercises. All exercising implements to be provided in sufficient numbers so that all individuals in an enclosure will have access to them.

Adequate facilities must be provided for an animal to rest or retreat from people and fellow exhibit mates.

Body of water at least 50 sq. m and 1 m deep.

EEP Ursid Husbandry Guidelines

Furnishings of the following type are recommended:

- Structures that create different microclimates – shrubs and trees, hills, horizontal wooden logs, large roots, sewer pipes, rocks, caves, barrels, large boxes.
- Structures that provide hiding places from conspecifics and visitors on the ground – similar to above.
- Obstacles that deter bears from attacking conspecifics – trees and shrubs, large horizontal logs or tree trunks.
- Climbing opportunities – living trees, dead trees and large branches arranged to form climbing frames with at least two exits, rocks with different slopes.
- Escape opportunities for small and newly introduced group members – living trees, dead trees creating climbing frames with at least two exits and small pathways impassable to large animals, openings with permit the entry of cubs and females but prevent the entry of males.
- Observation points and elevated resting places – trees, hills, rocks, dead trees forming climbing frames with platforms with at least two exits.
- Hiding places for food – piles of branches, rocks and wooden logs which can be moved by the animals, pipes installed vertically in the ground 40-60 cm deep, tree pip.

Enrichment can be provided in the following ways:

- Varied substrates – natural ground, dry leaves, hay, straw, wooden shavings or wood chips, sand, gravel, bark litter, shredded newspaper.
- Varied vegetation – grass/herb mixture, trees (including fruit trees, oak, beech and ash), shrubs and bushes (especially with edible fruits, flowers and leaves).
- Furnishings – as above.
- Stimulation of prolonged foraging and feeding behaviour – live fish, edible branches, ice blocks containing food, root vegetables hidden in the ground, nuts, raisins and small fruits hidden in piles of sticks and branches, logs with holes drilled in them filled with mealworms, crickets or honey, bones, hides, etc.
- Encouraging exploratory and play behaviour – large plastic cans, tubs, pipes and traffic cones, branches and twigs, wooden logs, ropes, boomer balls, large fishing floats, empty rope reels.
- Stimulation of olfactory and rubbing behaviour – different flavours on the ground and on elevated structures to elicit sniffing behaviour, hides for rolling and rubbing, resin or spruce-needle oil on tree trunks and the ground elicits rubbing, scent trails leading to concealed food items.

A pool sufficiently deep for bathing must be provided. A stream and waterfall may also provide an interesting feature.

FOOD & WATER

Aspen Valley Wildlife Sanctuary

Food

Provided once daily, including fruits and vegetables.
Natural berry bushes also available.

Water

Available in ponds or creeks.

Bear With Us

Food

Bears are fed unlimited amounts one time daily. Food sources are natural and fresh where possible, and include road-kill deer, dead fish, fruits, vegetables, seeds, eggs, insects, and natural browse.

Water

Fresh drinking water provided in non-tippable containers.

Greater Vancouver Zoo

Food

Pelleted dog chow, a variety of produce, whole salmon and trout, raw meat on occasion, and natural vegetation. Bears are fed one time daily. The food is scattered throughout the exhibit on the ground.

Water

Water is naturally occurring in the ponds and stream, but there is also a self-filling water bowl attached to the fence 1 ft. off the ground.

International Bear Foundation

Food

Food is provided several times a day. The bears are fed natural foods, depending on the availability in nature and the availability on the market.

Water

Water is available at all times.

Jardin Zoologique De St-Felicien

Food

Bears are feed dry canine pellets twice daily. Apples, carrots, eggs, live fish and bread are scattered throughout the exhibit. Natural browse is also available.

Water

Water is available from lakes and river.

Magnetic Hill Zoo

Food

Bears are fed once daily in a designated feeding area; food is scattered throughout the exhibit for enrichment. The bears are feed fruits, vegetables, seeds, dog biscuits and eggs. Natural browse is also available.

Water

Fresh drinking water is available.

North Carolina Zoological Park

Food

Bears are fed yams, apples, carrots, oranges, omnivore diet, and high protein dog chow. Feed is scattered on exhibit twice daily and the bears are fed in the holding area in the evening.

Water

A Nelson drinker is on the exhibit, and concrete drinking troughs are in the holding pen. These are cleaned daily.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Food

Bears should be fed daily. Primary diets should be based upon a nutritionally complete dry dog food, dry omnivore biscuit, dry primate biscuit, or canned dog food. If such dry food is used, it should be offered at a rate of at least 60% of the diet by weight. If canned dog food is used, it should be offered at a rate of at least 90% of the diet by weight. Fruits and vegetables may make up to 40 % of the diet by weight, depending on whether dry or canned food is the base diet. Bears may receive fish fed at approximately 20% of the overall diet. Frozen fish should be supplemented with thiamin (25 mg/kg food) and Vitamin E (100 IU/kg food) immediately before feeding. Bears should consume 1.5-2.0% of their body weight per day in dry matter but there may be significant seasonal fluctuation in food intake. Bears may hibernate or become inactive for periods of 2-3 months. Food intake will decline dramatically or stop altogether and individuals

can cease being fed during that period. As the bears emerge from hibernation, food should be gradually increased as appetites improve.

Water

Fresh clean water for drinking should be available at all times. Built-in watering devices may be used. All water containers should be cleaned and disinfected daily.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

General provision.

In order to maintain animals in good condition, food normally eaten in the wild should be provided. Since this is not always feasible, a varied diet of whatever native foods are available, plus comparable substitutes, should be offered. Constant availability of fresh water is imperative.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

Food

General provisions only.

- Feed preparation area must be kept sufficiently clean to prevent contamination of feed and feed preparations utensils.
- Food must be stored in such a way to prevent damage to food from weather and animals.
- Meat, fish, fresh fruit and vegetables to be fed to wildlife must be refrigerated to prevent spoilage.
- All scraps left after feed preparation must be stored outside of feed preparation area until it can be properly disposed.
- All diets shall be prepared according to the age, species, condition, size and type of animal. Variety should be considered.
- Food must be adequate, palatable and free of any contamination.
- Feed must not be placed on floor of substrate except as approved by a person authorized by the Director.
- Captive wildlife should be fed daily except as recommended otherwise by a veterinarian or by other accepted professional practices.
- All vessels used to hold feed must be capable of being sanitized. Such vessels must be kept in a sanitary condition.
- All uneaten perishable food is to be removed daily.

Water

General provision only.

- No person shall fail to provide captive wildlife with an adequate supply of potable drinking water to meet its biological need.
- Drinking water must not be left standing and allowed to become stagnant.

- All vessels used to hold drinking water must be capable of being sanitized. Such vessels must be kept in a sanitary condition.

EEP Ursid Husbandry Guidelines

Food

Seasonal variations in feeding motivation should be taken into account:
SPRING: predominantly green vegetables, wheat shoots, dandelions with roots, freshly cut grass, alfalfa or clover, branches of willow tress, grass and weeds, hay, carrots or vegetables, and occasionally meat including the bones and skin.
SUMMER: slowly changes to a diet with increasing amounts of fruit and other more nutritious items such as bread. Spring food can sometimes be offered in addition.
AUTUMN: in addition to fruits and carrots, offer mast food, such as nuts, seeds and occasionally fatty meat.

Food should be scattered, the bulk of it can be offered on the ground. Food which floats, such as nuts or apples should occasionally be scattered in the water. Some of the food should be offered high above the ground, so that the animals have to climb or to adopt bipedal postures to reach it.

Water

Should always be provided.

HEALTH AND VETERINARY CARE

Aspen Valley Wildlife Sanctuary

Veterinary care provided as necessity demands.
No breeding allowed (permanent residents are neutered).
Orphaned cubs are kept in a 20 ft.x20 ft. nursery enclosure until ready for release in outdoor enclosure.

Bear With Us

Animals are routinely treated with Ivermectin (anti-parasite).
Fecal exams are performed if problems are suspected.

Greater Vancouver Zoo

Fecal exams are done randomly twice yearly. Bears are dewormed every 3 months with Strongid-T for ascarids. Full-time veterinarian is on staff. Animals requiring veterinary care are immobilized with a tranquilizer dart and removed from the exhibit for treatment.

International Bear Foundation

Fecal exams are done regularly. Bears are vaccinated for rabies.
There is a quarantine building with 4 indoor and outdoor cages, which are 3m x 3m x 3.5m.

Jardin Zoologique De. St.-Felicien

Once yearly, the veterinarian will do fecal exams, vaccinations, and treat for external parasites.

Magnetic Hill Zoo

Fecal exams are required. The veterinarian visits bi-weekly.

North Carolina Zoological Park

No information provided.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

Services of a veterinarian experienced with large carnivores are recommended. Because bears are more prone to internal parasites than some other large mammals, fecal exams should be performed twice a year and treated appropriately. No general vaccinations are recommended.

On an opportunistic basis, bears should receive physical exams that include ophthalmic examination, dental cleaning and calculus removal, claw examination and trimming, abdominal palpitation and blood collection for a complete blood count and serum chemistry panel. Individuals involved in management programs or otherwise likely to be transferred should be

permanently identified with tattoos of their studbook or accession number. Insertion of a Trovan microchip transponder at the base of the left ear is also recommended.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

General provisions.

A trained observer or animal keeper can detect changes in animal activities that signal health problems. It is the responsibility of every person keeping wildlife to become acquainted with information on food requirements and likely health problems of the species under his/her care. A licensed veterinarian should be accessible and his/her services requested when health problems are first detected.

Captive animals often develop features not normally found in the wild such as corns and overgrown bills, talons, toenails or incisors. These conditions can be remedied by trimming the abnormal growth and partly avoided by providing adequate perches, bill-reducing materials, proper flooring etc. Adequate protection from flies or other insects is necessary, especially during hot, dry periods. Special holding facilities must be provided for animals of a size or type, which cannot easily be restrained in order to treat health problems. For operators holding more than 10 animals, a hospital holding area, surgical facility and quarantine area should be available.

A veterinarian other than the owner of a wildlife farm must be designated in writing as being available for consultation and animal care. A veterinarian from, or recommended by, the Manitoba Department of Agriculture Veterinary Services Branch should annually inspect the condition of all animals.

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

General provisions.

The facility must have a veterinarian on staff, or if not, then a veterinarian must agree in writing that he/she will adequately service the facility and do regular checks of the animals.

In the event of an illness, disease, injury, or other form of poor health in an animal, records must be kept of the day to day progress or regress of the animal and all treatments, medicinal or otherwise, that are administered.

Records must be kept of all routine procedures such as fecal checks.

No person shall fail to segregate a diseased or injured animal from its enclosure mates if, in the opinions of a veterinarian, continued contact poses further threat to any animal.

No person shall fail to provide care for injuries and to control contagious, parasitic and nutritional disease of captive animals.

Each animal must be given a general health examination every six months by a veterinarian and records kept of each examination.

A fecal test for internal parasites must be done for each animal every three months and records kept of each test.

All persons holding captive animals will practice preventative medicine to help prevent illness or injury.

EEP Ursid Husbandry Guidelines

Bears should be dewormed every other month with an oral anthelmintic such as Fenbendazole, Mebendazole, Ivermectin or Pyranthel Pamoate.

Other health problems that may need to be treated include lacerations, dental problems, and tumours.

SAFETY & SECURITY

Aspen Valley Wildlife Sanctuary

Public are admitted only under direct supervision, as this is a sanctuary not a zoo.

Bear With Us

No public allowed in this facility.

Greater Vancouver Zoo

The public views the exhibit from an enclosed bus. Two drive through double-gate systems with automatic opening devices are the only way to enter and exit the exhibit. The gates are designed to make it impossible to have two gates open at once to prevent escapes due to vehicle driver error. Animal care attendants are equipped with 2 way radios. Animal care attendant feed animals by driving into the pen with an enclosed cab vehicle and dump food on the ground with a hydraulic dump box on the back of the vehicle. There is an established protocol for animal escapes.

International Bear Foundation

Double fencing around exhibit. Double door system for entry and exit. Public have access to the site over a bridge that is 3 m high and also through a tunnel on ground level that is protected by a stand off barrier.

Jardin Zoologique De St-Felicien

A perimeter fence and a double door entry system are present. The public must visit the area by train.

Magnetic Hill Zoo

There is a perimeter fence, public standoff barriers and a double door entry system.

North Carolina Zoological Park

A perimeter fence and a double door entry system (with windows to view in) are present. There is a public standoff barrier above the pool. There is a secure containment area.

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals

All outdoor enclosures should have adjoining indoor facilities to permit safe cleaning.

Province of Manitoba
Guidelines for Keeping Wildlife in Captivity

General provision.

The "Public Protection" portion of the guidelines states "A proper barrier must be in place to prevent viewers from contacting animals or vice versa. A safe feeding and watering facility is essential to protect caretakers….Such measures as moats, Texas gates and vehicles may be used to separate viewers from wildlife, and still allow animals to be seen by the viewing public."

Province of Newfoundland
Guidelines for Facilities Holding Captive Wildlife

General provisions.

Enclosures must be constructed with sufficient structural strength so as to prevent escape of the wildlife they are containing as well as provide safety to the public.

All enclosures must be key or combination locked, except under special circumstances and with the prior approval of the Director.

Enclosures must have signs warning of any known or suspected problem or behaviour that might be dangerous to humans (e.g. Animals May Bite).

All enclosures will be built to a standard that will reasonably ensure that the proposed exhibit animal does not escape.

EEP Ursid Husbandry Guidelines

Keeper's entrances leading into the outdoor enclosure should have solid metal doors on the outside and a barred door on the inside of the enclosure.

CONCLUSIONS

The natural history of the American black bear reveals that it is a solitary animal, spending the majority of its time foraging for food. Its natural habitat is a large forested area in which it forages, climbs trees, digs, swims and fishes. All the facilities reviewed in this report attempt to recreate an environment similar to that found in the wild. These facilities are all large natural areas with ground substrate, vegetation, shrubs, rocks, trees and water. Enrichment was met in each of these facilities by providing natural features as well as ample opportunity to forage. All animals had the ability to remove themselves from the view of the public and cage mates at will, as well as the opportunity to find shelter and shade. Finally, all facilities attempted to meet the social needs of their bears by either housing them in very small groups with one male, or by providing an extremely large space for bigger groups.

The AZAA *Minimum Husbandry Guidelines* and the Province of Manitoba's *Guidelines for Keeping Wildlife in Captivity* did not compare favourably with any of the participating facilities in relation to exhibit size. On the other hand, the Province of Newfoundland's *Guidelines for Facilities Holding Captive Wildlife* had excellent minimum spatial requirements.

Both the AZAA *Minimum Husbandry Guidelines* and the EEP *Ursid Husbandry Guidelines* emphasize the importance of environmental enrichment, especially through foraging opportunities, however the Manitoba and the Newfoundland Guidelines lack any recommendations in this area.

In comparison to these model facilities, the Zoocheck report *The Bear Essentials: A Survey of Captive American Black Bears in Ontario (1999)* reveals many bears in Ontario are currently housed in completely inadequate enclosures. Many of these bears live in extremely small, barren concrete cages lacking any furnishings or natural features and providing no opportunity to forage.

It is clear that the most critical aspects of American black bear housing and husbandry are the provision of appropriate natural space and environmental enrichment. These should be the primary considerations whenever American black bears are kept in captivity.