

**Canada's Forgotten Polar Bears**

**An Examination of  
Manitoba's Polar Bear Export Program**





## **CANADA'S FORGOTTEN POLAR BEARS:** An Examination of Manitoba's Polar Bear Export Program

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### **EXECUTIVE SUMMARY**

The following report sets out the natural history of polar bears: i.e. their distribution, history; physical characteristics; adaptations for the cold, including thermoregulation; their sight, hearing and smell; adaptations for an aquatic environment; and behaviour. Understanding the natural history of polar bears is critical for a discussion of the specialized needs of this species in captivity.

The next section of the report describes the Manitoba Polar Bear Export Program (MPBEP) operated by the Wildlife Branch (WB) of Manitoba Natural Resources (MNR). The report outlines Zoocheck Canada's involvement with the MPBEP, including a discussion of problems with the application/review process; the fee system; inadequate follow-up; and the establishment of the Polar Bear Facility Standards Advisory Committee in response to Zoocheck's recommendations for change.

The investigation methodology for data collected for the purpose of making recommendations to MNR is outlined, followed by a brief summary of investigation results setting out major problem areas for Canadian polar bears exported through the MPBEP, as follows:

- 1. Undersized enclosures**
- 2. The absence of soft substrates**
- 3. The lack of environmental enrichment**
- 4. Inadequate and/or contaminated swimming pools**
- 5. Abnormal stereotypic behaviours**
- 6. The sale, transfer, and/or trade of Canadian polar bears from recipient institutions to other facilities**

The next section of the report describes the mostly appalling conditions experienced by Canadian polar bears in sample zoos throughout the world including Beijing Zoological Gardens, China; Parc Zoologique de la Palmyre, France; Ruhr Zoo, Germany; Dublin Zoo, Ireland; Aso Bear Park, Japan; Chapultepec Zoo, Mexico; Suarez Bros. Circus, Mexico; Jardim Zoologico Lisboa, Portugal; Taipei City Zoo, Taiwan; and the Columbus Zoo, Ohio, U.S.A.

Finally, the following report makes five recommendations to Manitoba Natural Resources, with an analysis of the rationale for each recommendation. Those recommendations are:

### **RECOMMENDATION #1**

***Establish a formal, legally binding loan agreement between the Government of Manitoba (the lender) and each recipient facility (the borrower) which allows for the removal, transfer and/or humane euthanasia of the animals.***

### **RECOMMENDATION #2**



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*Each zoological facility applying to acquire polar bears from the Province of Manitoba should be required to submit a non-refundable deposit with its application, and be subject to a mandatory on-site facility inspection by designated representatives of the Province of Manitoba.*

### **RECOMMENDATION #3**

- A. Establish a set of acceptable (as opposed to minimum) standards for the care and housing of polar bears in captivity, and require applicant zoological facilities to meet or exceed the standards prior to receiving polar bears from the Province of Manitoba.*
- B. Conduct a thorough review of the standards bi-annually with the intent of upgrading the criteria for placement.*

### **RECOMMENDATION #4**

*Stop the export of polar bears to zoological facilities in tropical regions.*

### **RECOMMENDATION #5**

*Euthanasia should be employed as a reasonable, humane course of action when acceptable zoological facilities are not available.*

The current report closes with an opinion letter from Dr. Lynn Rogers, renowned bear biologist, endorsing Zoocheck Canada's recommendations and findings following an independent review.

## **FACTS ABOUT POLAR BEARS**

### ***Distribution***

Polar bears (*Ursus maritimus*) are circumpolar in distribution, inhabiting the majority of Arctic seas and coastlines. They range across territory owned by Canada, the United States, Russia, Sweden, Finland, Norway and Denmark.

In Canada, polar bears can be found from Labrador to the Alaskan border, and from James Bay to northern Ellesmere Island. During the summer, bears in the Hudson and James Bay areas spend several months inhabiting terrestrial landscapes, sometimes travelling as much as 150 km (90 miles) inland.

An estimated 20,000 to 40,000 polar bears remain in the wild. The United States Alaskan population is thought to number around 2,000, while Canada's polar bear population is estimated at between 13,000 and 15,000 individuals.



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### *History*

Polar bears probably evolved from brown bears only 70 to 100,000 years ago. During the Pleistocene period, brown bears were isolated by the advance of glaciers. This resulted in a series of rapid evolutionary changes to adapt to the arctic environment, including the development of a number of unique physiological attributes. In evolutionary terms, polar bears should be viewed as bears first, and as arctic inhabitants second.

### *Physical Characteristics*

Polar bears are the largest living land carnivore, with males reaching a weight of up to 650 kg (1,433 lbs.) and a length up to nearly 3 m (9.9 ft). Females are smaller, weighing up to 250 kg (551 lbs.) and reaching a length of 2.5 m (8.2 ft). The largest polar bear ever recorded weighed 1,002 kg (2,209 lbs.) and measured 3.7 m (12 ft) in length.

Polar bears can achieve an age of more than twenty-five years in the wild, and more than thirty-five years in captivity.

### *Adaptations for the Cold*

The body shape of polar bears differs from other bears in that they have elongated bodies and relatively long, slender necks, a streamlining adaptation conducive to swimming. Their heads are small when compared to their overall body size, and their snout is arched. Their ears are small and rounded, and are laid flat when swimming underwater.

Polar bears have thick stocky legs, with the hind limbs being longer than the forelimbs. The paws are very large, sometimes reaching more than 12 inches in diameter, and serve as a snowshoe, spreading out the bear's weight as it moves across ice and snow. Each paw has one non-retractable claw, used for grasping prey and for traction on slippery surfaces.

The sole of each foot has a thick black pad covered with tiny bumps, and long hairs grow between the pads and the toes. Both of these characteristics help create friction between the foot and the ground preventing slippage. Their physical characteristics and swinging method of locomotion cause polar bears to use more energy to move at a given speed than other mammals. Their average walking speed is about 5.5 kph (3.4 mph), but they can reach speeds of 40 kph (25 mph) at times.

Polar bears have black skin, a broad black nose, and a small tail. The black skin facilitates the retention of heat from sunlight that reaches the body surface.

Fur covers the entire body of polar bears, except for the nose and footpads. Dense underhair serves to insulate the body, and is covered by a thinner layer of stiff, clear, hollow guard hairs. The guard hairs reflect sunlight down the shaft of each hair to the body surface. The fur is oily and water repellent, and shakes dry.



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Polar bear hair reflects light, giving the bears their white coloration. Depending upon the angle of the sun and the season, polar bears may appear yellowish or light brown in colour.

### ***Thermoregulation***

In addition to their thick fur and tough skin, polar bears are equipped with a layer of blubber, up to 11 cm (4.3 inches) thick, to help them maintain a body temperature of 98.6 degrees F. Polar bears are so well insulated, they easily become overheated. To prevent this from happening, polar bears move slowly and rest often, and will swim to cool down on warm days. Excess heat is released from the body through areas where fur is absent or minimal such as the snout, footpads, ears, and inner thighs, and by panting.

### ***Sight, Hearing & Smell***

Polar bears have hearing and eyesight comparable to humans. Their sense of smell is acute, and is extremely important in detecting food sources. Polar bears are able to smell a seal from a distance of more than 32 km (20 miles). Little research has been conducted regarding the polar bear's sense of touch, but bears in captivity and in the wild have been observed manipulating small objects with great dexterity.

### ***Adaptations to an Aquatic Environment***

Polar bears are exceptionally strong swimmers, often swimming long distances for hours at a time. They've been tracked swimming continuously for more than 100 km (62 miles). They can reach a swimming speed of close to 10 kph (6 mph).

The polar bear's large paws serve as paddles and help propel them through the water. The ears fold back and the nostrils close while swimming underwater. They swim at depths of up to 15 feet and can remain submerged for up to 2 minutes.

### ***Behaviour***

Each polar bear has its own home territory which varies in size depending on food availability and weather conditions. Individual bear territories may overlap with the territories of other bears.

Polar bears mate and give birth every two to three years, with pregnancies lasting approximately eight months. Females seek out maternity dens as early as August, but most enter sometime in October. The majority of dens are situated on land, within 16 km (10 miles) of the coast, but dens have been found as far inland as 100 km (62 miles).

Polar bears of both sexes will on occasion occupy dens and shelters to overcome severe weather, food scarcity or to escape from summer heat and insects.

Cubs are born in the den from November to January, and emerge with their mother sometime in



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March or April weighing approximately 10 to 15 kg (22-33 lbs.). The most common litter size is two.

The major area of social interaction for polar bears is between females and cubs. Polar bear cubs learn many of their behaviours, including hunting, by following along and observing their mother. At about 30 months of age, when their mother is ready to breed again, she chases the cubs away.

Polar bears feed mainly on seals, but also scavenge for carcasses of whales and walrus. They will also consume reindeer, small mammals, birds, fish, eggs, vegetation and human refuse. They are capable of eating as much as 20% of their body weight at one time.

Polar bears utilize several methods for hunting. The most common is remaining motionless by a breathing hole or ice edge, and grabbing a seal when it surfaces to breathe. Other methods of hunting include stalking on land, stalking in the water, and searching for seal birth dens.

Polar bears are most active during the morning hours, with activity levels decreasing as the day progresses. Adult female bears with cubs spend about 19% of their time hunting during the spring, and about 38% of their time during the summer. For adult males, it's about 25% and 40% respectively.

### **ZOOCHECK CANADA'S INVOLVEMENT WITH THE MANITOBA POLAR BEAR EXPORT PROGRAM**

#### ***Introduction***

Early in 1995, Zoocheck Canada was made aware, by the Winnipeg Humane Society (WHS), of the shipment of two polar bear cubs from Manitoba to Safari World in Thailand. The WHS was trying to determine if the export of two Canadian polar bear cubs to Thailand by the Wildlife Branch (WB) of Manitoba Natural Resources (MNR) was legitimate and humane.

Since that time, Zoocheck Canada has been conducting an investigation into the MNR practice of shipping wild-caught "problem" and "orphaned" polar bears from the Churchill region to zoos around the world.

According to the Wildlife Branch, the division of MNR that administers the polar bear export program, more than 30 bears have been shipped internationally.

Each fall polar bears migrate along the coast of James Bay waiting for the water to freeze so they can disperse across the ice in search of seals and other prey. The Town of Churchill, Manitoba is situated on the migration route, and very close to an area where the bears congregate while they wait for freeze-up.

Perceived as a threat to human safety, the bears who enter the town are captured and held in



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“bear jail” until the ice forms, at which point they are released to go on their way. At times, bears have also been relocated to other areas. Because the bears return year after year, individual bears may be captured over and over again. Some may eventually be deemed “nuisance” bears. These bears, as well as a substantial number of orphaned cubs, have been donated by the Province of Manitoba to zoos around the world.

In a letter to Zoocheck Canada dated May 23, 1995, WB Director Brian Gillespie states, “The department from time to time acquires orphaned bear cubs. These cubs are not capable of surviving on their own. In addition, some polar bears, near the town of Churchill, become habitual problem animals and can be expected to be a continuing threat to human safety. Only two humane and practical choices for dealing with these animals exist, euthanasia or zoo placement.”

In a letter to Vicki Burns, Executive Director, Winnipeg Humane Society, dated May 23, 1995, Cathy Johnson, WB Chief of Nongame and Endangered Species Management, states, “When polar bears enter the primary control area immediately around Churchill, they are immobilized, marked and removed from the area.... Bears are considered to be a problem when they have been captured within the control area at least three times.”

The polar bear export program has, for the most part, operated with little public scrutiny. In fact, many members of the public in Manitoba, and elsewhere across Canada, are surprised when they learn that Canadian polar bears are exported to zoos in other countries.

### ***Problems with the Application/Review Process***

Each year the WB receives a number of requests for live polar bears from zoos and wildlife brokers/dealers around the world. When a polar bear is designated by the WB as available for export, the requests are reviewed. The review process is *supposed* to determine whether or not the applicant facility requesting polar bears is able to house and care for polar bears in an acceptable manner.

In a letter to Zoocheck Canada dated May 23, 1995, WB Director Brian Gillespie states, “Before sending polar bears to a zoo, the department requires a written description of the facility in which the bear will be kept.”

In a letter dated April 9, 1996 to S. Chiaramello, former Manitoba Minister of Natural Resources Albert Driedger states, “Recipient zoos must provide detailed descriptions of their facilities including engineering drawings, photographs and documentation of their affiliation with internationally recognized zoological associations.” Mr. Driedger repeats this or similar statements in letters to D. Grady, June 21, 1996; A. Miller, August 1, 1996; E. Elliot, August 15, 1996; D. McIntyre, October 9, 1996; S. Opl, December 10, 1996; and S. Lacroix, January 22, 1997.

In a letter to J. Goldman dated February 10, 1997, the Honourable J. Glen Cummings, who





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replaced Albert Driedger as Minister of Natural Resources in early 1997, repeats the statements made by his predecessor.

Unfortunately, the information collection and assessment process of the WB with respect to the Manitoba Polar Bear Export Program appears to be little more than an act of good faith. There seems to be scant information available about applicant facilities. Further, there is currently no system in place to accurately assess the quality of each applicant facility or to verify the information submitted.

In an effort to determine the quality and quantity of information provided by zoos seeking to acquire polar bears, Zoocheck Canada submitted three separate Freedom of Information (FOI) requests to the MNR. The information received by Zoocheck in response to these requests was minimal and represented only a fraction of the zoos which had received Canadian polar bears.

The MNR's response to a 1995 Zoocheck Canada FOI request for "copies of all written documents, drawings, photographs, and other materials of cages and enclosures in zoological facilities which have requested or received live polar bears" supports Zoocheck Canada's belief that the requirement for information as stated by Brian Gillespie, Albert Driedger and J. Glen Cummings is not enforced.

In a letter to Rob Laidlaw, Zoocheck Canada dated September 28, 1995, M. Shoesmith, Assistant Deputy Minister, Natural Resources states, "Your application under the Freedom of Information Act was a request for ...'copies of all written, drawings, photographs and other materials of cages and enclosures in zoological facilities which have requested/and or received live polar bears from the Wildlife Branch of Manitoba Natural Resources. This is to advise you that access has been granted to the records indicated above. Copies of the records are enclosed."

Yet, despite the indication that *all* documents requested would be made available to Zoocheck Canada, the Deputy Minister's letter was only accompanied by eight pages of very poor information: four pages each on Safari World in Thailand and Aso Bear Park in Japan.

A response to an earlier Zoocheck Canada FOI request contained a small amount of information regarding a polar bear enclosure at the zoo in Santander, Spain.

Zoocheck Canada submitted a third FOI request in 1996 for copies of "all written descriptions of zoo cages and enclosures, including engineering drawings and photographs, in zoos which have received live polar bears from the Province of Manitoba. Also, copies of all documentation of recipient zoos' affiliation with internationally recognized zoological associations."

In a letter dated July 8, 1996, W.J. Podolsky, Management Services Division, MNR states, "This is to advise you that access has been partially granted to the records indicated above.... We have not duplicated any information that was previously sent in response to your 1995 request but may have included information that was not available at that time. Since our last response, two zoos have received polar bears from Manitoba - the Zoo de la Palmyre in Les Mathes, France and the



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San Diego Zoo, in San Diego, California.”

While the Government of Manitoba reserves the right to refuse to release commercial information belonging to a third party, and technical information supplied to a department by a third party on a confidential basis, there seems to be an inconsistency. For example, the MNR released information to Zoocheck concerning enclosures at several zoos which received Canadian polar bears, yet declined — or was unable — to do so for others.

All in all, the information provided by MNR to Zoocheck Canada about animals distributed through its polar bear export program was scant. Either the information was *incomplete*, despite reassurances to the contrary, in which case a question is raised about what the Ministry is hiding from public scrutiny. Or, the information provided was *complete*, and thus, woefully inadequate for the MNR to make an informed and responsible decision about the adequacy of applicant facilities to receive Canadian polar bears.

This situation certainly suggests that the WB does not enforce its stated requirement for the submittal of detailed information. Regardless, there is no mechanism in place to verify whether or not that information is accurate. The WB does not conduct on-site inspections of prospective recipients. There is nothing to prevent a facility from providing inaccurate information to bolster its chances of acquiring polar bears.

### ***Inappropriate Reliance by MNR upon CAZPA & “Canada Agriculture” Standards***

Representatives of MNR have repeatedly made claims about zoological facilities needing to meet certain standards for the keeping of animals prior to receiving Canadian polar bears. An examination of these claims reveals that MNR may be bending the truth.

In a letter to Vicki Burns of the Winnipeg Humane Society dated May 23, 1995, Cathy Johnson of MNR states, “Zoological gardens must meet Canadian Association of Zoological Parks and Aquaria (CAZPA) and Canada Agriculture standards for the keeping of animals.”

In a subsequent letter to Vicki Burns dated November 9, 1995, Cathy Johnson reiterates that point, stating, “The Canadian Association of Zoological Parks and Aquariums set Canadian standards for animals in captivity. A copy of their report - *General Guidelines for Planning an Animal Care and Display Facility* - should be available from their office. This document provides broad general guidelines or regulations that enables us to be certain that minimum humane standards of animal care will occur. All zoological gardens which have received bears in the recent past have far exceeded these standards.”

In a letter to S. Chiaramello dated April 9, 1996, former Minister of Natural Resources Albert Driedger states, “Zoos must meet the care and facility standards set by the Canadian Association of Zoological Parks and Aquariums and USA Department of Agriculture. These are minimum standards that are acceptable and are not voluntary.... If a zoo fails to meet these minimum requirements, they will not receive Manitoban bears.” Mr. Driedger repeats this statement in



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letters to L. Nadon, June 6, 1996, and to D. Grady, June 21, 1996.

Prior to its 1994 Annual General Meeting, the CAZPA did not even have published standards for captive animal care and housing. All this time, the WB of MNR has been referring to the *CAZPA General Guidelines for Planning an Animal Care and Display Facility* (1989). The guidelines are subjective; extremely broad in nature; and do not specifically address the care or husbandry of any bear species. Further, reliance upon CAZPA guidelines independent of an on-site inspection of the applicant facility is meaningless.

The CAZPA has conducted a voluntary accreditation program for its member institutions since the mid-1980s. To receive accreditation, a facility undergoes a comprehensive review by an inspection team, which is usually made up of three CAZPA members from other facilities. The review process has been largely subjective in nature. The zoo being inspected covers the cost of the accreditation inspection.

For quite some time, the “Canada Agriculture” standards referred to by MNR remained a mystery, even to the MNR. In a letter to Zoocheck Canada dated July 26, 1995, WB Director Brian Gillespie identifies the source of the standards as follows: “The following documents are used to evaluate the suitability of a zoo for polar bear placement: Agriculture Canada - Federal Register dated 1979 regarding Marine Mammals, Humane Care, Treatment and Transportation.... Please contact those agencies if you wish copies of their documents.”

A thorough search with the assistance of Agriculture Canada and Environment Canada employees failed to locate the above-referenced documents. Even WB staff didn't seem to know what they were.

Finally, after more than a year and several requests to the WB for copies of the “Canada Agriculture” standards, a solution was found. In a letter dated July 15, 1996, Albert Driedger, Minister of Natural Resources, states, “With reference to your questions concerning standards and guidelines, the standards attributed to the Department of Agriculture are not Agriculture Canada, but United States Agriculture standards (Federal Register Volume 44 Part V Department of Agriculture Marine Mammals: Humane handling, care, treatment and transportation).” Until it was brought to their attention, it seems that no one in MNR knew what the “Canada Agriculture” standards were, let alone if zoos were able to meet them.

Even if standards were in place, it would be extremely difficult, if not impossible, for the WB to determine if they were being met, since there is no on-site inspection associated with the WB review. Neither the CAZPA or the American Association of Zoos accredits facilities without an on-site inspection.

Within the zoo industry, pre-inspections of exhibits and husbandry routines prior to the shipment of animals is relatively common. Pre-inspections have been conducted by many zoos prior to the shipment of great apes, elephants, bears, koala bears, and other animals.



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In conclusion, there seems to be little truth to claims by Manitoba Natural Resources that recipient zoos must meet CAZPA and Canada Agriculture standards, or any standards for that matter.

### ***A Non-Revenue Program — Zoos Pay Nothing But Shipping Costs***

MNR does not require any form of payment for Canadian polar bears exported to zoos throughout the world. Instead, the animals are donated to applicant zoos deemed fit enough to care for them. Potential recipients must cover all costs related to shipping of the bears.

Occasionally, Canadian zoos provide assistance to MNR by serving as temporary holding stations for bears in transit to other locations. Winnipeg's Assiniboine Park Zoo has provided this kind of assistance for approximately sixteen bears over the years.

There is no logical reason why zoological facilities wishing to obtain polar bears, a highly sought-after species within the zoo community, should not be required and willing to pay a fee-for-service to cover the cost of a legitimate assessment to evaluate the ability of the institution to care for those animals.

### ***Inadequate Follow-up***

MNR has repeatedly claimed that a follow-up procedure is in place to determine the status of polar bears six months or more after their shipment internationally.

In a letter to S. Chiaramello dated April 9, 1996, former Minister of Natural Resources Albert Driedger states, "Six months to a year after a bear is received recipient zoos are required to provide a status report and if possible this is confirmed by local conservation agencies." Despite requests for copies of these documents, none have been forthcoming from the WB. In any event, in the absence of a legally binding agreement, there is no way to ensure that reports on the status of exported polar bears will be provided by recipient facilities.

Too often, Canadian polar bears are lost in the system. Zoocheck Canada's investigation has revealed several cases of these animals being transferred from the original recipient facility to other facilities. It appears as though follow-up has been lax or absent in many cases. For the most part, MNR does not seem to know if the polar bears they've exported are managing in their new homes, or if they have been sold, transferred, traded, or loaned to other facilities, or even if they have died.

### ***The Polar Bear Facility Standards Advisory Committee***

On October 24, 1996, Rob Laidlaw of Zoocheck Canada and Vicki Burns of the Winnipeg Humane Society, met with WB officials to discuss concerns about the polar bear export program. At that time, several recommendations were presented by Zoocheck Canada to address those concerns. The WB agreed that the recommendations had merit and requested further information



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for their consideration.

One of those recommendations was the establishment of a balanced, impartial working group. That group was to conduct a critical review of the export program and review the latest developments in polar bear husbandry with the intent of developing an acceptable (as opposed to minimum) set of standards for the care and housing of polar bears in captivity. Zoocheck Canada stressed that the working group should represent all sides of the polar bear issue and should be conducted in a transparent manner.

MNR did proceed with the establishment of a working group known as the Polar Bear Facility Standards Advisory Committee. Its first meeting was held on January 16, 1997 at the Assiniboine Park Zoo in Winnipeg, Manitoba. The Committee was comprised of two representatives of the Assiniboine Park Zoo, one from the Winnipeg Humane Society, two WB staff members, and one non-affiliated person.

Because of the role played by the Assiniboine Park Zoo in the export of approximately 16 polar bears in years past, and the fact that the zoo currently exhibits polar bears (one from the Churchill region) in antiquated facilities, Zoocheck Canada felt that zoo representatives on the working group were in a conflict of interest situation, and thus, that the composition of the Committee was imbalanced.

Hoping to rectify this situation, and honour the spirit of the organization's original recommendation, Zoocheck requested that a more balanced composition be sought for the working group. A formal request by Zoocheck Canada to sit on the committee at the organization's own expense, and similar requests made by the Winnipeg Humane Society on behalf of Zoocheck, were rejected, despite the pivotal role played by the organization in bringing the polar bear issue to the attention of MNR.

In a letter to Rob Laidlaw, Zoocheck Canada dated March 13, 1997, Ron Larche, MNR Nongame/Protected Species Biologist states, "I do not share your view that Dr. Wrigley or Mr. Phil King [the Assiniboine Park Zoo representatives] are in a conflict of interest by serving on this committee but instead I believe they bring a zoo perspective and expertise to it."

The Polar Bear Facility Standards Advisory Committee met several times from January through April, 1997. Rob Laidlaw of Zoocheck Canada was invited to attend one session of the Committee on April 17, 1997. The current report was prepared for submission to the Committee at that time.

### ***Poorly Administered and Managed — Time for Change***

In sections to follow in this report, evidence will be provided as to the appalling conditions experienced by polar bears distributed — and forgotten — through the Manitoba Polar Bear Export Program. This information is submitted as proof of the failure of that program to be administered and managed in a professional way that ensures the welfare of the bears involved.



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The program lacks legal controls, acceptable husbandry standards, pre-shipment verification procedures, and follow-up.

Despite this shameful situation, government politicians and officials continue to blindly defend the Manitoba polar bear export program. In a letter to J. Goldman dated February 10, 1997, Manitoba Minister of Natural Resources J. Glen Cummings states, "The Department of Natural Resources believes that the current review process promises that Manitoba polar bears going to zoos will obtain humane husbandry."

A look at the tragic results of the MNR polar bear export program is proof of its inadequacy, and the need for change. In the current report, Zoocheck Canada offers concrete recommendations for change.

### **INVESTIGATION METHODOLOGY**

Zoocheck Canada utilized a variety of methods to acquire information about the status of Canadian polar bears in zoos around the world. A number of factors made this task difficult, including the refusal of MNR to identify the names of facilities they had shipped polar bears to; communication difficulties due to language differences; and the inability and/or unwillingness of recipient institutions to locate historical records pertaining to polar bears.

Where possible, regional contacts were asked to call or visit specific facilities to obtain information and/or documentation of the conditions in which polar bears were being kept. In addition, information was solicited through telephone, fax, e-mail and mail communications to individuals, institutions and government agencies around the world. A list is provided in Appendix A.

Information was also obtained from print media clippings, popular and scientific reports, a variety of books relating to bears and wildlife in captivity, and several internet web sites.

### **A BRIEF SUMMARY OF INVESTIGATION RESULTS**

A number of serious problem areas were uncovered during the course of this investigation. They fall into the following general categories:

7. Undersized enclosures
8. The absence of soft substrates
9. The lack of environmental enrichment
10. Inadequate and/or contaminated swimming pools
11. Abnormal stereotypic behaviours
12. The sale, transfer, and/or trade of Canadian polar bears from recipient institutions to other facilities



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### **A SAMPLE OF INVESTIGATION RESULTS**

Because of the recurring nature of problems found in zoological facilities which have received polar bears from the Province of Manitoba, not all results are included in this report. Instead, a representative sample was provided in order to highlight major concerns.

#### ***Beijing Zoological Gardens, China***

Dr. John Wedderburn, Asian representative of the Born Free Foundation, describes conditions at the Beijing Zoo, "I visited the Beijing Zoo in 1978, 1994, and in March and June, 1996. It is a beautiful park full of mature trees and miserable animals... It is very large with an extensive collection of 'exhibits'. But every cage is a small concrete box. In 1978, I remember large areas of grass and trees with animals wandering about - but that's all gone - the animal areas are entirely concreted over. The human areas are all clean and well cared for but the animal areas are not good. No attempts whatsoever at environmental enrichment. Many examples of stereotypic behaviour, many in frantic motion.... People shouting and poking the animals to get reactions and laughing at zoochotic behaviours."

On April 9, 1997, Xiaohui conducted an inspection of the Beijing Zoo polar bear enclosure for Zoocheck Canada. According to Xiaohui, "There are altogether 5 polar bears in Beijing Zoo. Jiajia, male, born in November 1988, came on April 19, 1989, from Winnipeg, Canada as a gift.... A Mr. Zhou at Raising Team and I went over the file and found Jiajia to be the only polar bear from Canada."

Xiaohui describes the polar bear enclosure, "Outside -- a big oval shaped pit about 50 m x 25 m, 4.8 - 6 m deep, concrete floor with stones cemented, in the south part there are several big trees with the trunks protected by cement, in the north part are some false mounts made of rocks, in the middle is a pool (size 8 m x 6 m), water depth 1.8 - 2.0 m. Inside,-- each bear has a cage room (3 walls and one bar) of less than 10 sq. meters., concrete floor, with a little water basin on the floor with drinking water.... I don't see playthings for them, except for a few rocks on the floor outside and a rock a bear in the pool is playing with (the rocks on the false mounts are unmovable)."

The Beijing Zoo polar bear enclosure is typical of bear exhibits in zoos throughout China. The entirely hard substrate of this exhibit is completely inappropriate as it affords the bears few behavioural opportunities. The lack of environmental enrichment, such as non-fixed furnishings like logs, branchwork, rocks, boomer balls, earth or bark chip areas, is a problem. The bears have nothing with which to occupy their time.

The small pool size does not allow the bears to swim. This serious design flaw should have precluded this zoo from acquiring polar bears. An expansive swimming area is a requirement for any humane polar bear enclosure.

Displaying bears in enclosures set into the ground, where members of the public can look down



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on the animals from all sides, is an antiquated design style that may cause considerable stress to the bears. Like virtually all other captive wild animals, bears must be able to retreat from the view of the public, and their cagemates.

The Beijing Zoo does not provide an appropriate captive environment for polar bears. It should not have been the recipient of the Canadian bear, now named Jiajia.

### ***Parc Zoologique de la Palmyre, France***

Parc Zoologique de la Palmyre received one or more polar bears from Canada in 1996.

According to a zoo employee, the adult bears are kept in a pool (600 square meters) with a ceramic tile floor. There are many rocks but no sandboxes or play objects.

A visiting United Kingdom zoo director with extensive experience in the husbandry of bears, who wishes to remain anonymous, called the new Parc Zoologique de la Palmyre exhibit a “horrible, old style, mess made of glass, steel and tiles. It’s supposed to resemble an iceberg. Just when you think things are getting better, you see something like this.”

He also commented on the poor safety measures in place at other parts of the zoo, “I observed a young child leaning over a very small guardrail feeding a hippopotamus popcorn. The child had almost his entire arm in the hippo’s mouth and nobody seemed to mind. He just kept shoveling popcorn into the hippo’s mouth.”

The provision of a barren, tiled enclosure with no environmental enrichment is not suitable for any bear species. This facility should not have received Canadian polar bears.

### ***Ruhr Zoo, Germany***

The Ruhr Zoo was established in 1949, when the Family “Ruhe” entered into a contract with the City of Gelsenkirchen. The contract stated that the Ruhe’s would maintain ownership of the animals while the city retained ownership of the zoo grounds and buildings.

The Family “Ruhe” has been involved in the exotic animal business for approximately 130 years, capturing wild animals in South America and Africa, transporting them to Germany, acclimatizing them to captive living, and then shipping them to institutions around the world.

The Ruhr Zoo served as an exotic animal warehouse and trading post. Animal dealers from around the world had the opportunity to view the latest acquisitions from the wild. According to German zoo critic Stephan Austermuehle, “Ruhe was the biggest zoo-animal-dealer during recent years. Ruhr Zoo Gelsenkirchen was, like two more zoos of the company, something like a temporary depot for animals before they were sold elsewhere.”

In a June 7, 1996 interview with Ingrid Pollak, Ruhr Zoo staff members stated that in 1985 they





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received 5 polar bears, two adult females and three cubs, from the Canadian government. In 1986, both adult bears were sold to Zoo Am Meer in Bremerhaven, Germany. The cubs were also sold, but staff were not sure of their destination. They did indicate that the United Arab Emirates was a possibility.

After arrival at the Ruhr Zoo in 1985, the Canadian bears were kept in an enclosure currently housing two Syrian brown bears. Ingrid Pollak viewed the enclosure which she describes as "... a terraced cement enclosure of approximate dimension 12 m x 12 m. Two sides of the enclosure consisted of cement walls while the front of the enclosure was a waterfilled moat.... The water in the pool was fresh water but there is no filtration system. The water was stale and dirty looking. There was lots of brown slime, algae and cigarette butts in the water.... There was an approximately 2 m x 2 m sand box in the enclosure."

Photos of the enclosure show a grossly substandard exhibit that is undersized, contains an inappropriate hard substrate throughout (except for one small sandbox); has no privacy areas; a relatively shallow, unfiltered pool, and virtually no environmental enrichment.

Pollak continues, "According to zoo staff (2), an approx. 28 year old polar bear is kept indoors during the day in the Syrian brown bear enclosure and let out only at night when Syrian brown bears are locked inside their cages. This fact was reluctantly confirmed by zoo management (1). When Ruhr Zoo bought this bear from another zoo they were not made aware of the fact that this bear did not have a tongue.... the zoo decided to not display the animal publicly."

Pollak also comments on another Ruhr Zoo polar bear, "The first display when entering is the enclosure of a dwarf polar bear named 'Antonia'.... 'Antonia is housed alone in a dry-moated cement enclosure of approx. 10 m x 10 m of which a pool of 3 m x 3 m takes up some space... The pool was fresh water without a filtration system. There was a tree stump in the enclosure from which a tire and 2 blue, plastic garbage cans were chained."

Pollak questioned zoo staff about the conditions, she states, "Zoo staff (1) admits to the poor environmental conditions given to elephants, large cats, primates, monkeys and bears. The excuse - there is no money. In 1984, the zoo gave up their gorillas, in 1988 their rhinoceros collection, ..."

On April 8, 1991, the Canadian bears were transferred yet again, this time from Zoo Am Meer to Zoo Duisburg. The new director of Zoo Am Meer felt his bear enclosures were inappropriate for polar bears.

In addition to substandard accommodation for bears, Manitoba Natural Resources should have known that the likelihood of these bears being sold or traded by a well-known animal trading facility would be high. Clearly, the welfare of the bears was not a priority in this exchange.

### ***Dublin Zoo, Ireland***



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The Dublin Zoo received two Canadian polar bears in the mid-1970s. Since that time, Spunky and Ootek, as they were named, have both been housed in a tiny 310 square meter enclosure.

According to animal behaviourist Dr. Roger Mugford, and veterinarian Dr. Samantha Lindley in the report *Dublin Zoo: An alien parasite in Phoenix Park* (1995), "The polar bears are a pair of extraordinary contrasts. The female was lying in exactly the same position, without movement, on both the Friday and the Saturday. The male was engaged in constant swimming ... one could see that this was a complex display of stereotypic behaviour with every movement, twist and turn of the head and eyes identical to the cycle before.... An adjacent mother with her children was overhead patiently explaining to them that this animal had gone mad after years in captivity and that was why he was doing the same thing over and over again. Most zoos have recognized that keeping polar bears in captivity is not appropriate and have phased them out. What is thought to be so special about Dublin Zoo, that its management thinks it can keep these unique animals in such a bad environment."

In addition to being extremely small, the Dublin Zoo polar bear exhibit lacks variety and provides no stimulation for the bears.

The polar bears have been the subject of several government inquiries into animal cruelty charges, the latest being in March, 1997. According to former Dublin Zoo keeper Brendan Price, "Those bears should never have come here. Its been a miserable life for those bears. Its about time things changed. If they don't, the zoo should be prosecuted for cruelty."

The extremely small, poorly designed bear exhibit at Dublin Zoo should never have been considered appropriate for polar bears by the government of Manitoba.

### ***Aso Bear Park, Japan***

Japanese bear parks are notorious for being among the worst zoos in the world.

In 1991, Aso Bear Park in Japan received one female Canadian polar bear. Aso is described in the report *Japanese Bear Parks* (1991) published by the World Society for the Protection of Animals: "With a total of 421 bears, this park holds the largest collection of bears in the world... The bears are kept in 21 different enclosures ranging from a sprawling cement grotto to small barred cages and high-walled cement pens. Others are kept in narrow, underground chambers which can be likened to dungeons.

In an amphitheater with seating for more than 100 people, trained bears dance, roller skate and perform a series of other tricks in 20 minute shows.

The worst enclosures at Aso are the underground chambers. From these dungeons the sound of bears roaring and throwing their bodies against metal doors could be heard throughout the park. Each chamber is less than one meter wide and two meters long. Bars separated a contiguous



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series of chambers. In September 1991, 73 bears were kept this way. Dr. Suzuki, the park's veterinarian, explained that this area was used to isolate injured animals. He also admitted that bears were being kept in dungeons because the park was so overcrowded."

The report goes on to describe an enclosure housing two polar bears, "They share a bare cement compound only eight meters square, including a pool. When the huge male was not sleeping or swimming, he was pacing the tiny cement platform. The female rubbed the right side of her neck on the bars of a cage at the back of the enclosure. She continued this stereotypic behaviour hour after hour."

In 1991, the administration of Aso Bear Park stated that they were researching the trade in bear gall bladders. According to *Japanese Bear Parks*, "sources have indicated that Aso supplied gall bladders to a pharmaceutical firm at Kiturin in China."

Canadian polar bears should not have been shipped to Aso Bear Park under any circumstances.

### ***Chapultepec Zoo, Mexico***

In late 1984, four Canadian polar bears were shipped from Churchill, Manitoba to the Chapultepec Zoo in Mexico City as company for the zoo's aging 32 year old polar bear. The Canadian bears included an 11 year old female polar bear with a one year old cub, an unrelated four year old male and a two year old female.

Upon arrival, the bears were exhibited in an enclosure with a hard, moulded, imitation rock substrate and walls, painted bright white in an attempt to simulate an arctic iceberg environment. The rear and side walls of the exhibit were solid and offered no visual stimulation for the bears. The floor of the exhibit sloped from a high point at the back wall, equal in height to the visitor viewing area, down to a water area at the front of the exhibit. The only shelter from the sun was provided by three imitation ice-caves near the front of the exhibit, which were open to public view. No soft areas were present, as the exhibit was comprised entirely of hard substrates. The enclosure was barren and had very little in the way of environmental enrichment.

The Chapultepec Zoo has since built a new polar bear exhibit. While more modernistic in design with an improved swimming area, the new enclosure is still a primarily hard substrate exhibit, with minimal visual stimulation, and few behavioural opportunities for the bears.

Examination of videotapes obtained during a 1996 inspection of the polar bear exhibit by B. Aridjis shows polar bears engaged in a abnormal repetitive stereotypic swimming and pacing behaviours.

An April 11, 1997, discussion between Annelise Sorg, on behalf of Zoocheck Canada, and Chapultepec Zoo veterinarian Miguel Pena Riveron reveals the status of the Canadian bears. According to Sorg, one of the Canadian bears died of "parasites and cysts" in 1993. The two female bears are on display but the "male is alone in a back enclosure with a patio and a small



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pool.”

Sorg explains why the male is isolated, “In 1994, the male got an ulcer in the right leg elbow. They had to anesthetize him every time they wanted to treat the ulcer and that was tough on the bear. To top it all, the wound kept getting bigger and worse, so the vet chopped the bear’s leg off. Now the vet’s worried he can’t breed him and doesn’t want the bear to go swimming in the display pool in case he drowns without the use of one leg. So they keep him in solitary confinement.”

The lack of appropriate facilities at Chapultepec Zoo and the consistently warm climate of Mexico City should have been enough to prevent the transfer of four Canadian polar bears in 1984. Since no binding legal agreement exists between Chapultepec Zoo and the Government of Manitoba, little can be done for the three-legged bear who is now kept in permanent solitary confinement.

### ***Suarez Bros. Circus, Mexico***

A March 29, 1996, article in the *Winnipeg Free Press* by Bruce Owen states, “... at least three bears from Churchill ended up performing in a Mexican circus.”

The Suarez Bros. Circus polar bear act came to public attention in Canada *after Winnipeg Free Press* staff photographer Ken Gigliotti attended a performance of the circus while on holiday in Cozumel, Mexico. He approached an official of the circus who told him three of the bears had come from Churchill, Canada.

“It’s really disturbing to see bears from Churchill in a circus in Mexico,” Gigliotti said. “One of the bears didn’t want to go into the ring and he was jabbed by the handler in the rear ribs. He really cranked that bear.”

In March 1997, a Nova Scotian resident observed the Suarez Bros. Circus bears while on vacation in Mexico. She was quite distressed, describing the trailers the bears were being kept in as “hardly longer than their bodies. The bears lay in their cages with their paws hanging over the edge, panting, all day long.” She also observed circus workers hosing down the bears on several occasions to provide relief from the heat and humidity.

According to Dr. Karin Linke of Zoo Rostock (Germany), Studbookkeeper for polar bears, three of the five polar bears shipped from Canada to the Ruhr Zoo in Gelsenkirchen, Germany in 1985, were subsequently sold by the zoo to an unnamed circus. Veterinarian Miguel Pena Riveron of the Chapultepec Zoo says that the Suarez Bros. Circus travels all over the world. In all probability, it was the Suarez Bros. Circus that purchased the bears in 1986, the year when the Ruhr Zoo sold the bears, since the circus claims to be the only performing polar bear act in the world.

### ***Jardim Zoologico Lisboa, Portugal***



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The Lisbon Zoo is believed to have received one female polar bear from Canada in 1991. An investigation of the exhibit on July 2, 1996 revealed a very small, semi-circular, rock enclosure an estimated two hundred square meters in size containing two polar bears. The exhibit consisted of a small, relatively flat, rocky plateau surrounded by uneven terraced rock steps down to a stagnant freshwater moat containing cigarette butts and other debris. The exhibit offered the bears no shaded areas (except for two small entranceways to an interior chamber which could only be utilized by one bear at a time); no privacy from the view of the public or each other; contained no soft substrate areas; and had no cage furnishings of any kind. One bear was observed engaged in an abnormal stereotypic pacing pattern.

The Jardim Zoologico Lisboa should not have received a polar bear from Canada. Their polar bear exhibit is grossly undersized, poorly designed, and does nothing to address the needs of the bears.

### ***Taipei City Zoo, Taiwan***

According to Minglee Yeh of the Life Conservationists Association of Taiwan, who conducted an inspection of the Taipei City Zoo on February 21, 1996 for Zoocheck Canada, only one polar bear remains in Taipei.

In late 1986 or early 1987, two Canadian polar bears, one male and one female, were donated to the Taipei City Zoo. Upon arrival, both bears were housed in a relatively stark concrete enclosure with a small water area.

The male bear died of cancer in 1994. The female bear now suffers from a chronic skin condition and is no longer on public display. According to Minglee Yeh, "The zoo closes her place for exhibiting, and keeps trying to find out the reason causing her skin problem. They said they have done all the lab testing and physical examinations, but couldn't figure out what was wrong with her. They have also consulted with other zoos and experts in other countries. Those people told them, that similar problems happened in other places too. It seems a popular problem while polar bears live in a non-nature situation, like a zoo, and is very difficult to cure. Since the reason of infection and pathological changes were ruled out, the nutrition and climate are now considered."

A 1996 World Society for the Protection of Animals videotape of the lone Taipei City Zoo polar bear shows an animal in extreme distress. Massive hair loss, scabbing, and constant irritation are evident in the video. Continual grooming have turned her forelegs bloody.

The Taiwanese climate is not appropriate for an animal adapted to arctic conditions. This, along with the lack of suitable accommodation, should have precluded Taipei City Zoo from receiving Canadian polar bears.

### ***Columbus Zoo, Ohio***



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In 1987, Manitoba Natural Resources donated a single 16 year old female polar bear to the Columbus Zoo in Ohio. The bear, named Ex, because of the letters EX painted on her side when she arrived at the zoo, attempted to escape from her enclosure forcing the erection of a steel extension barrier on top of the exhibit wall. While the extension served to confine her in the enclosure, it also prevented her exhibition. This, along with the fact that Ex did not produce any young, prompted the zoo to start looking for a new home for her in 1989.

According to Columbus Zoo employee Don Winstel, the polar bears were housed in an enclosure with two separate pens, the first being approximately 65' long x 29' wide, and the second being 41' long x 19' 4" wide. Both enclosures could be linked allowing the bears access to either side. No soft substrate areas were provided in either pen as the entire floor surface was comprised of moulded gunite (artificial rock).

Ex and her cagemate were eventually shipped to the Guadalajara Zoo in Mexico where they will be subjected to a consistently warm climate unlike anything they would experience in the wild.

### **INTRODUCTION TO ZOOCHECK CANADA'S RECOMMENDATIONS**

On October 24, 1996, Zoocheck Canada presented several recommendations to the MNR WB with regard to the polar bear export program. Zoocheck believes that if these recommendations were adopted and enforced, they would go a long way toward addressing the many concerns that have been expressed regarding the export of polar bears to zoos around the world.

#### **RECOMMENDATION #1**

***Establish a formal, legally binding loan agreement between the Government of Manitoba (the lender) and each recipient facility (the borrower) which allows for the removal, transfer and/or humane euthanasia of the animals.***

Zoological facilities have been selling, trading and loaning animals for many years. In the early 1970s, zoos began incorporating the retention of rights to genetic resources in particular animals in their loan agreements. These agreements set the stage for the widespread use of Breeding Loan Agreements (BLAs) between zoological facilities around the world.

As with loan agreements in the business world, agreements for the transfer of animals should be formal and legally binding. They should be designed to address all aspects of the transfer and should leave no doubts as to the rights and responsibilities of each party.

Dr. Samantha Lindley, a British veterinarian with broad experience conducting zoo welfare audits, states that because "...there is a wide variation of animal welfare legislation in the countries which may receive Canadian polar bears, a legal basis for an agreement is essential to safeguard the welfare of the bears".



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Dr. Lindley also recommends that the agreement state “that should the bears be required to be moved, the Government of Manitoba must be informed, and the government and the zoo concerned should be mutually responsible for ensuring that the same safeguards and requirements are in place as for the original export. A decision to euthanase the bears, if that is the best option, should be included as part of the considerations”.

Agreements can be made between individuals, institutions and governments of all levels. They should clearly state the reason for the loan, the responsibilities and extent of control by each party, and provisions for amending or modifying the agreement if required. The welfare of the animals must be explicit in the document.

Current breeding loan agreements generally contain four separate sections: an introduction, obligations of the lender, obligations of borrower, and obligations of both parties.

At the current time, the Government of Manitoba does not require the signing of any formal agreement by applicant zoological facilities prior to receiving polar bears.

### **RECOMMENDATION #2**

***Each zoological facility applying to acquire polar bears from the Province of Manitoba should be required to submit a non-refundable deposit with its application, and be subject to a mandatory on-site facility inspection by designated representatives of the Province of Manitoba.***

A non-refundable deposit should serve to discourage frivolous inquiries from zoological facilities lacking appropriate accommodation for polar bears, as well as wildlife dealers looking to profit from the sale of bears. Veterinarian Samantha Lindley endorses the concept saying that “the fee for application is an excellent idea”.

The amount of the deposit should be sufficient to cover all expenses related to an on-site inspection of the applicant facility. A sliding deposit fee scale should be established based on the proximity of the facility to the Province of Manitoba and the expenses that would be incurred in conducting an inspection.

Not only would an on-site inspection ensure verification of the information supplied by the applicant facility, it would also allow for some degree of assessment of other aspects of the applicant zoo, such as veterinary care, educational programming, etc.

The WB of MNR currently claims that all facilities applying to receive polar bears must supply detailed information, including engineering drawing and photographs. Unfortunately, there is no way of verifying whether or not this information is accurate, especially in facilities outside of Western Europe and North America.

The Province of Manitoba should endeavor to make the inspection program neutral from a



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financial and labour perspective. While applicant deposit fees should be sufficient to cover expenses related to on-site inspections, a list of “qualified” volunteer representatives should be established to circumvent the need to send WB employees on inspection reviews.

The British Zoo Licensing Act 1984 has a similar system in place for inspection of zoological facilities throughout the United Kingdom. According to British veterinarian Dr. John Gripper, an inspector under the act since its inception, “the program is workable and fair”.

Dr. Samantha Lindley suggests that the inspection of applicant zoos be carried out by having “two representatives of the Manitoba government on the inspection team - perhaps one from the country of destination, if possible. One should be a veterinary surgeon not employed at any time by zoos, circuses, or by local authorities to inspect such premises and the other a licensed zoo inspector or equivalent. This would safeguard against either extreme of opinion being given”.

According to former zoo director Peter Batten, “The polar bear is a valuable trophy for any zoo director. To help prevent their further abuse, an application fee and expense-paid on-site examination of prospective quarters by qualified appointees is required. This should encourage either more appropriate housing or fewer applications for “freebie” polar bears.”

Statements made by Singapore Zoological Gardens Assistant Director Bernard Harrison, support Peter Batten’s contention that polar bears are trophy animals for zoo directors. Harrison states, “One of the main criteria for choosing polar bears was their obvious visitor appeal, especially for an arctic animal in equatorial Singapore. This would mean a boost for visitor attendance, an important consideration for us, a privately-run, wholly owned Government company.”

He goes on to say, “If you feel that your increase in visitor attendance and hence overall revenue will cover these costs, taking into account your inevitable decline in visitor attendance without such an attraction, then do it without hesitation, for they are a tremendous crowd puller ....”

The Province of Manitoba does not currently require an on-site inspection of zoological facilities prior to shipment of polar bears.

### **RECOMMENDATION #3**

- A. Establish a set of acceptable (as opposed to minimum) standards for the care and housing of polar bears in captivity, and require applicant zoological facilities to meet or exceed the standards prior to receiving polar bears from the Province of Manitoba.***
- B. Conduct a thorough review of the standards bi-annually with the intent of upgrading the criteria for placement.***

In the zoo world, polar bears are often considered one of the most problematic animals to house and care for. According to British veterinarian/zoo inspector Dr. John Gripper, “In my visits and





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inspections of zoos around the world, I find that the polar bear is probably the most difficult animal to confine in a zoo enclosure without showing abnormal behaviour.”

Veterinarian Samantha Lindley states, “It is now accepted by most United Kingdom zoos that polar bears are not suitable animals to be kept in captivity.”

According to zoo consultant Stefan Abbott Ormrod in his report *A Review of Captive Polar Bears In Great Britain and Ireland (1992)*, “It is clear that polar bears have great difficulty in adjusting to the conditions of captivity. This is especially clear when one examines the widespread incidence of aberrant behaviours.”

In his book *Last Animals At The Zoo (1991)*, Colin Tudge states that, “Polar bears have been a huge challenge to zoos. They are ... ‘easy to keep alive’, and they breed reasonably well these days but they are among the most notorious of all stereotypers: pacing and head-rolling. Even zoo enthusiasts have often doubted whether polar bears should be kept in captivity.”

He goes on to say, “It seems obvious though that innately lively animals need stimulating environments, and of all zoo enclosures none is likely to be more barren than the polar bears.”

In *Wild Mammals In Captivity (1996)*, David Hancocks, Director of the Arizona-Sonora Desert Museum, discusses the typical grotto style exhibit that many bears are still displayed in, “These grottoes, like the equally ubiquitous pits of the nineteenth century zoos, were used principally for large mammals, especially bears, or, when built in the round (with an island in the middle), for monkeys. Sometimes made of bricks or concrete, but most often with rocks, either real or artificial, these exhibits were heralded as naturalistic and humane. Yet, invariably these fanciful versions of caves and hills, devoid of anything alive except the pacing animal, were featureless and bland places.”

Hancocks continues, “The rockwork was oppressive and pervasive, built as clumsy replicas of arbitrarily invented geological formations. The grottoes’ lack of subtlety was worsened by their monotonous repetition in zoos all over the world. The animals were kept contained in the open air, but nothing else was achieved.”

In her report *The Behaviour of Captive Polar Bears (1993)*, ethologist Alison Ames writes, “Enclosure designs and husbandry routines for captive polar bears have been as stereotyped as the animals themselves. Preconceived ideas about the animals’ abilities, antiquated facilities, and lack of financial support, have resulted in zoos providing their bears with extremely predictable and basic husbandry routines. This type of captive management can no longer be considered acceptable.”

Acceptable standards for captive polar bears must not be based on financial, political or cultural considerations, but instead should be based on the natural ecology of the species. Unfortunately, in many institutions, lack of knowledge and financial considerations have severely impacted on the provision of appropriate captive environments for polar bears.



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Because of their size and physical abilities, and the misconception that gunite and concrete floor surfaces simulate arctic sea ice habitat, polar bears have been relegated to relatively small, barren enclosures. Many facilities have also utilized hard surfaces because they are easy to clean and keep pathogen free.

Naturalist Barry Kent MacKay doesn't feel those are valid reasons for continuing to keep polar bears in captivity. He says, "The arctic sea ice habitat is varied in texture and contour. The concrete floors and simulated rocks that are found in many zoo exhibits bear no resemblance to sea ice-habitat, and they've caused an immeasurable degree of suffering to the bears."

MacKay continues, "In years past, the difficulty in keeping cages clean and animals alive may have been a legitimate reason for constructing hard barren enclosures. But today, we know far more about how complex these animals are and what they need. If we recognize that other mammalian species, such as rodents, ungulates, canids, primates, and a whole host of other creatures, do better on natural floor surfaces, even though they may be more difficult and more labour intensive to clean, why on earth don't we recognize this for polar bears. If an institution is unable to properly house and exhibit polar bears according to their biological/ecological needs, then they should not be exhibiting polar bears."

In *The Behaviour of Captive Polar Bears*, Alison Ames states, "Superficial attempts to recreate sea-ice habitat by building captive enclosures with white concrete and blue pools can no longer be considered appropriate for polar bears. In such an area there is little which relates to the wild ecology of the species, and there is little to stimulate natural behaviour."

Kathy Carlstead of the National Zoological Park in Washington, D.C. states in the book *Wild Mammals in Captivity*, "To maintain wild-type behaviour in captivity, it is necessary to fit environmental conditions to the animal, rather than expecting the animal to adapt to the conditions imposed upon it."

Zoocheck Canada believes that acceptable standards for captive polar bears should address several *major* areas of concern which can be roughly divided into three categories. They are the provision of adequate space, natural substrate, and environmental enrichment.

### ***The Provision of Adequate Space***

When considering the spatial requirements of polar bears in captivity, it is important to consider the fact that polar bears traverse enormous territories in the wild. According to biologist Ian Stirling in the book *Bears, Majestic Creatures of the Wild*, "In some areas, such as the inter-island channels of the Canadian High Arctic Archipelago, sea ice is present for most or all of the year, so bears do not need to travel great distances to remain on it. Some of these bears have a home range of *only a few thousand square kilometers* [emphasis mine]. In contrast, the southern edge of the Chukchi and Bering Seas, where seals are most abundant, moves enormous distances north and south between summer and winter every year. Some female polar bears in that region need home ranges *in excess of 300,000 square kilometers (116,000 square miles)* [emphasis



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mine] in order to be able to find enough suitable sea-ice habitat for hunting throughout the year.”

In *The Great Bear Almanac* (1993), the range of polar bears is described as more than 20,000 square miles per bear. Polar bears may require the largest living space of any terrestrial animal species.

In contrast, black bears typically range over an area from 3 to 40 square kilometers (1 to 15 square miles) for females, and 20 to 100 square kilometers (8 to 40 square miles) for males, while brown bears in North America may have home ranges from 133 to 1,000 square kilometers (51 to 385 square miles).

Recognizing the fact that the typical tiny grotto and concrete bunker style bear exhibits are spatially inadequate and biologically irrelevant to the species they contain, zoos around the world are gradually moving to larger, more stimulating environments for bears in captivity.

Lydia Kolter, EEP Bear Taxon Advisory Group (TAG) Co-Coordinator is currently helping to develop new guidelines for the husbandry of bears in European zoos. She believes that all bear species in zoos must receive much larger expanses of terrestrial habitat than they have been allocated in the past. Kolter recommends that enclosures include several separate components that can be linked together, which will allow the bears to remove themselves from the view of each other and the public, and will prevent animals being locked in off-exhibit areas when individuals need to be separated.

Marilyn Cole, former polar bear keeper at the Metropolitan Toronto Zoo in Canada, agrees that large animals, such as bears need more space. She says, “The bigger the better for polar bears. For people to learn, the animals have to be comfortable. There should be lots of privacy areas. Zoos have been too lax in this regard.”

Along with the increase in knowledge of the natural ecology of polar bears, there has been a shift in attitude within governments and the zoo industry with regard to spatial requirements for bears in captivity. Many of the antiquated accommodation standards that have been accepted in the past are now being reviewed.

When asked about the appropriateness of the 31 year old United States Department of Agriculture (USDA) Animal Welfare Act space requirement for polar bears in captivity, Dr. Barbara Kohn, veterinarian in charge of exhibition animal regulations for the USDA's Animal and Plant Health Inspection Service (APHIS) stated, “The USDA recognizes the need for change. A review process has been underway for quite some time.”

According to Lydia Kolter, EEP Bear TAG Co-Coordinator, the legislated standard of approximately 300 square meters for a pair of polar bears in her home country of Germany is now considered much too small.

According to zoologist Dr. Ronald Orenstein, “The old standards aren't really taken seriously



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anymore. Even zoos currently housing their bears in substandard enclosures know they're too small."

Needless to say, the minimum enclosure size of 400 square meters per pair of polar bears set out in a 1984 report entitled *Guidelines for Keeping Wildlife in Captivity* published by the Wildlife Branch of Manitoba Natural Resources is woefully out of date.

Not all standards from years past were abysmally small. Certain jurisdictions recognized that large animals should, for the most part, have large spaces in captivity. In 1982, Sweden's space requirement for two adult polar bears in captivity was approximately 1,200 square meters, while 1,500 square meters were required for each pair of brown bears. Norway has mandated even larger space requirements for bears.

The Government of Newfoundland and Labrador's recommended minimum standard guidelines for captive bears exceed those of the Scandinavian countries. The standard for two adult polar bears in Newfoundland currently sits at 4,500 square meters.

While many experts are reluctant to suggest actual size requirements for captive polar bear enclosures, a review of black, brown and polar bear zoo enclosures provides an indication of current trends toward larger enclosures.

In addition to terrestrial space, a large quantity of aquatic space must also be provided for polar bears. Unfortunately, many zoos exhibit polar bears in enclosures that do not allow the bears to swim, or in some cases, to even fully submerge themselves.

Polar bears are capable of swimming enormous distances in the wild. According to Gary Brown in *The Great Bear Almanac*, "The polar bears are without question the 'swimmers' of all bears. Their shape allows them to move through the water with relative ease, propelled with strong, powerful strokes. Swimming approximately 300 miles between ice floes, they display enormous endurance in the water .... They can apparently swim for days without hauling out to rest."

Pools should be large enough to facilitate swimming by the bears, preferably filled with salt water, and be filtered or changed regularly. While pools in natural substrate enclosures may become cloudy with debris, this should not be viewed as problematic. The behavioural opportunities afforded by a natural substrate far outweigh the presence of cloudy water in an enclosure.

Because of increased public pressure and the recognition that polar bears may not be ideal candidates for most captive facilities, the United Kingdom has experienced a dramatic decline in the number of zoological facilities displaying polar bears.

Criticism of conditions endured by two Canadian polar bears housed in the Dublin Zoo's tiny 310 square meter enclosure has sparked an organized movement to make Ireland a captive bear-free zone.



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Some zoos have chosen to stop exhibiting polar bears altogether, such as Zoo Am Meer in Bremerhaven, Germany, who were the recipients of two Canadian polar bears via the Ruhr Zoo in 1986. Other institutions, such as the Columbus Zoo in Ohio, have chosen to move their polar bears elsewhere.

In his book *Last Animals At The Zoo*, zoologist Colin Tudge comments on where we should be going with polar bear exhibits, “Polar bears like rocks for sunbathing and lots of space to swim, and all the diversions and varieties of diet the keepers can think up; but they also appreciate hills and trees, and earth and grass to dig in. ***The enclosure should be big - we always should be thinking in terms of acres - and ideally, perhaps, only a part of it should be on public display*** [emphasis mine]. There should be fields and woods for the animals to retreat to.”

### ***Natural Substrates***

Polar bears have traditionally been exhibited in barren concrete or gunite floored enclosures, commonly referred to as grotto or bunker style exhibits. In many ways they resemble fortresses or jails. As mentioned previously in this report, there are several reasons why polar bear exhibits were constructed in this manner.

According to Alison Ames in *The Behaviour of Captive Polar Bears*, “In the past, designs of polar bear enclosures have been based upon security, ease of maintenance, and preconceived ideas about the species’ sea-ice habitat.”

Former zoo director Peter Batten believes that the practice of maintaining animals permanently on hard floor surfaces should end: “Not only can hard surfaces be bad from a health perspective, they do nothing to stimulate natural behaviours. Nothing in nature has prepared any animal for a life on concrete.”

Bear biologist Mat Reid who has observed black, grizzly and polar bears in the wild agrees that keeping bears on hard surfaces is unnatural and completely inappropriate.

Former Metropolitan Toronto Zoo keeper, Marilyn Cole believes that keeping animals on entirely concrete floor surfaces is not good from a physical, behavioural, or educational perspective: “For people to learn, the animals have to be comfortable.”

Jeremy Usher-Smith, EEP Bear Taxon Advisory Group Co-Coordinator and Manager of England’s Highland Wildlife Park, has long been a strong proponent of soft substrates for bears. He considers the benefits of soft substrate enclosures to far outweigh any negative factors.

In an article published in the *Proceedings of the 23<sup>rd</sup> National Conference of the American Association of Zoo Keepers, Inc.* (1996), Dr. Anne E. Smith, Senior Veterinarian of the Detroit Zoological Institute states, “Concrete areas should be replaced with natural substrates that encourage digging, nesting, burrowing, hiding, swimming, scratching and foraging.”



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British veterinarian Samantha Lindley is especially critical of hard substrate exhibits. She states, “Many exhibits are still the concrete bunker type, which are wholly unsuitable for bears and indeed for all captive species. Many try to incorporate token sandpits, or shavings which are largely ignored. There is, of course, no snow and ice, and muddy paddocks are no substitute for the frozen James Bay.”

The paragraph below from *The Behaviour of Captive Polar Bears* (1993) by Alison Ames indicates that polar bears in captivity and in the wild actually prefer soft substrate areas:

*Substrate preference of a captive, male/female pair of polar bears was recorded following the addition of natural substrates to their concrete enclosure. A total of 60 hours of observations were collected. The substrate on which these bears were lying, rubbing, feeding, or digging was recorded. For all of these behaviours, the male spent at least 78% of the total activity time in the natural areas. The female was observed to use the natural pits for 19% and 21% of feeding time and lying time respectively. 75% of the male's foraging time occurred in either the water or a natural area while 60% of the female's foraging occurred in these areas. The female's use of the natural pits was much reduced because the male monopolized the areas. The captive animals' preference for softer substrates was supported by observations collected on the ecology of wild polar bears in the Churchill area of Canada's Hudson Bay. Wild bears were observed over a three month period during the autumn of 1991. Over 77% of the bears seen on the inland tundra were found in either heavily wooded areas along the sides of streams or lakes or in areas covered in lichens and berries. Along the coastline, over 80% of the polar bears were on sand banks or tall grass areas. As snow began to accumulate, the majority of bears rested in snow banks, kelp or willows.*

In the book *Management Guidelines for Bears and Raccoons* (1992), published by The Association of British Wild Animal Keepers, Alison Ames states quite clearly, “Polar bears should be provided with natural overgrown areas where they can exhibit their full behavioural repertoire. Some populations of wild polar bears spend up to five months of the year on beaches and inland tundra.”

Dr. Anne E. Duncan of the Detroit Zoological Institute says, “In most situations, providing exhibits with substrate choices for carnivores, and in particular polar bears, is preferable to keeping them on purely gunite substrates.”

New polar bear enclosures must be designed with the physical, psychological and social needs of the bears being the highest priority. The provision of natural substrates is one of several essential design factors necessary to ensure an acceptable quality of life for polar bears in captivity.

### ***Environmental Enrichment***

According to Kathy Carlstead in *Wild Mammals in Captivity*, “...environmental enrichment



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means providing a complex and diverse environment that increases the possibility that the captive animal's own behaviour will produce what it needs: finding food, demarcating a territory, building a nest, maintaining its physical condition, escaping conspecifics, or hiding."

Hal Markowitz and Anita J. Gavazzi provide a simpler definition of environmental enrichment in the book *The Well-being of Animals in Zoo and Aquarium Sponsored Research* (1996): "... elements of the environment that measurably increase the animal's well-being."

Regardless of what definition is used, it is clear that polar bears have historically been exhibited in some of the most environmentally impoverished conditions imaginable. Barren enclosures, small pools, and lack of stimulation have been the norm for many years.

Sadly, some zoos still cling to the belief that complex captive environments are not required and that animals in captivity live the good life. Statements such as, "they don't have to work for their food", "they're protected from predators", "they're provided with veterinary care and shelter from the elements", and "they're better off than their relatives in the wild", completely ignore the biological/behavioural needs of animals and display a grossly anthropocentric view of nature.

Markowitz and Gavazzi (1996) agree: "It seems clear ... that the most unkind thing that we can do for animals in our care is to leave them with no ability to control any of the critical elements in their environments or their existence. Unlimited institutional "care" is a prescription for helplessness and decreased resistance to stress in human beings (Hobfoll, 1989) and there is increasing evidence that the same is true for other species where measurement has been accomplished."

Providing an appropriate environment for wild animals in captivity, regardless of whether they were captive born or wild-caught, can be a challenging task. For most animals, confinement requires the suppression or removal of the major activities in their lives, such as food acquisition and the ability to make choices. These activities must be replicated, replaced or compensated for in some way.

Polar bears have long been identified as a species that is especially prone to the development of abnormal behaviour patterns in captivity. These usually manifest themselves as stereotypic pacing or swimming patterns, which are essentially meaningless repetitive movements.

Even zoos with the largest budgets have difficulty keeping their polar bears free of stereotypic behaviours. The Calgary Zoo in Alberta and the Central Park Wildlife Centre in New York have both conducted prozac trials with their bears to reduce abnormal stereotypic behaviour patterns.

Zoo consultant Stephan Abbott Ormrod in his report *A Review of Captive Polar Bears in Great Britain and Ireland* (1992) is convinced that "... stereotypy is a clear indication that the animal suffered in the process of developing it. By suffering I mean a degree of stress that will perhaps, always remain impossible to define - but in many cases it is clearly an emotion that can



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reasonably be compared to chronic frustration in humans”.

Environmental enrichment has been put forward as one of several methods aimed at improving the lives of captive animals.

Environmental enrichment is an ongoing and often difficult task, especially for complex species. Unfortunately, many zoos make only token efforts at enrichment. The provision of boomer balls, branches, frozen food objects, and interval feeding are merely the tip of the iceberg when it comes to enrichment, but this is all that many zoos do. According to Gordon M. Burghardt in *The Well-being of Animals in Zoo and Aquarium Sponsored Research*, “Enrichment must be viewed as a continuum that can apply to all levels of animal maintenance, including the ecological, behavioural and psychological.”

In some zoos, the lack of enrichment programming is blamed on budget and human resources. It's not uncommon to hear “We just don't have the staff”. Sometimes programs start out with the best of intentions but fizzle and die after a short while.

Naturalist Barry Kent MacKay believes that enrichment must be a priority in every zoo, and that “Budget and human resources are poor excuses for doing nothing. In order to properly house and care for animals like polar bears, zoos must be committed to aggressive, ongoing enrichment programs”.

According to Maple and Perkins in *Wild Mammals in Captivity*, “Virtually any mammalian taxon can benefit from the presence of appropriate enclosure furnishings. The provision of usable surfaces, objects, toys, and manipulable and movable materials gives the animals sources of novelty, variability, complexity, and stimulus change.”

The field of environmental enrichment is rapidly growing with new developments almost weekly. While major structural changes to barren captive enclosures, or the construction of new biologically relevant exhibits may take time, interim steps can be taken to improve the lives of animals. This is certainly the case with polar bears, and some zoos have already taken steps in this direction.

Veterinarian Samantha Lindley warns against seeing environmental enrichment as a panacea for polar bears in captivity: “... there is a fundamental misunderstanding at work here. Firstly, the enrichment has to be frequent, constantly changing and unpredictable for it to maintain its effects. Yet routine is the backbone of a zoological garden - feeding, cleaning out, feeding again, etc. Throwing the odd ball or traffic cone in to the bears may well stimulate transient activity, but this is soon lost. Many an enclosure has so much trash floating around ignored by the bears because the novelty value has been lost after half an hour or less. Secondly, there is nothing which can substitute for the ranging-hunting-waiting-surviving lifestyle which a polar bear has in the wild.”

While environmental enrichment may not be *the* answer to the larger problems faced by captive





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polar bears, it can be a useful tool, when done properly and in conjunction with other initiatives, to help polar bears cope with captivity by increasing their quality of life.

Alison Ames (1993) makes a number of suggestions for improving polar bear exhibits in the short term, including the provision of movable objects into and out of enclosures on a regular basis to stimulate exploratory and play behaviours; a wide variety of objects so the bears have more choice and control in their environment; visual barriers in exhibits to provide opportunities for the bears to remove themselves from the view of the public and each other; the provision of natural substrate areas such as pits of sand, bark litter, pebbles and dirt so the bears can dig, build day beds, rub themselves and forage; and scatter feeds and random feedings, in addition regularly scheduled feeds. This list is by no means exhaustive.

One area that is almost universally ignored by zoos housing polar bears is the utilization of vertical space through the provision of climbing structures. While polar bears in the wild do not normally have an opportunity to climb trees, they do climb a variety of other natural features.

In *The Great Bear Almanac*, Gary Brown states that the polar bear is an "... agile climber of ice ridges; climbs to travel and pursue prey. Can jump/scale over six-foot high ice barriers; can jump down ten feet; can scale a thirty-five foot ice wall".

In the report *The Welfare and Management of Bears in Zoological Gardens* (1994), Alison Ames states that "Bears should be provided with climbing frames to enable them to exhibit their skills and interest in an arboreal habitat.... It seems clear that a greater emphasis should be put on the third dimension when designing exhibits for any species of bear."

Dr. Anne E. Smith sums it up in her paper *Carnivore Enrichment*: "Bear exhibits should be as complex as possible. Enrichment strategies should be developed and worked into the design of any new exhibit or provided through renovation."

### ***The Trend Toward Bigger, Softer and More Complex Exhibits for All Bears***

One of the newest black bear exhibits in North America is at the North Carolina Zoological Park. Its landscaped enclosure featuring high cliffs, a wading pool, and a number of high trees is approximately 14,500 square feet in area. Two male grizzly bears, deemed nuisance bears by the Grizzly Bear Recovery Program and the U.S. Fish and Wildlife Service are exhibited in a landscaped 8,000 square foot enclosure.

The inner city Bronx Zoo in New York displays several grizzly bears in an enclosure roughly 10,000 to 15,000 square feet in size, while the Columbus Zoo in Ohio exhibits black and grizzly bears in spacious natural substrate paddocks.

The Magnetic Hill Zoo in Moncton, New Brunswick is putting the finishing touches on a new black bear enclosure approximately 1 ½ acres in size which will feature heavy, mature woods, natural substrates, and a large open pond area. The bears are currently housed in a small grotto



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style concrete enclosure.

The tiny Centre Naturanimo Vallee de la Matapedia near St. Cleophas, Quebec exhibits several black bears in an expansive wooded paddock.

The St. Felicien Zoo in central Quebec which recently changed from an exotic wildlife facility to an indigenous wildlife park features one of the largest bear enclosures in the world.

At nearly 8,000 acres, its natural landscape compound provides a semi-natural lifestyle to twenty-two black bears, several moose, white-tailed deer, and bison. Two grizzly bears are also exhibited in a natural enclosure approximately 3,375 square meters in size, and the new polar bear exhibit is approximately 1,240 square meters in size.

Black bear rehabilitation specialist Mike McIntosh provides a minimum of ½ acre of natural space for each bear at his Bear With Us Sanctuary near Huntsville, Ontario, and recommends much larger spaces for grizzly and polar bears who occupy a larger home range in the wild than black bears.

The first zoo in North America to construct a larger, more natural style polar bear enclosure was the Point Defiance Zoo and Aquarium in Tacoma, Washington. Its 11,780 square foot exhibit features natural substrates, gravel beds, and a flowing salt-water stream and pool.

The San Diego Zoo recently replaced its old grotto style polar bear enclosure with a new \$8 million 2.2 acre Polar Bear Plunge featuring a 130,000 gallon swimming area.

The Rio Grande Zoo in Albuquerque, New Mexico is replacing its antiquated polar bear exhibit with a new 5,000 square foot enclosure featuring natural substrate areas and two pools with a combined volume of 100,000 gallons.

The Bronx Zoo in New York displays polar bears in a 10,000 square foot semi-natural exhibit.

Recognizing that their exhibit isn't acceptable anymore, the Dublin Zoo is currently planning a new much larger polar bear exhibit to replace their aging 310 square meter display.

According to Dr. Anne E. Duncan, Senior Vet for the Detroit Zoological Institute, "The Detroit Zoo is currently planning a huge, primarily natural substrate polar bear exhibit equipped with a lake."

### ***Grottos — Exhibits of Days Gone By***

The large number of undersized grotto and bunker style polar bear enclosures still found in many zoos will eventually become a thing of the past as more and more zoos move to improve or rebuild existing exhibits, construct new more biologically relevant exhibits, or move their bears to more suitable accommodation in other facilities.



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According to Lydia Kolter, EEP Bear Taxon Advisory Group Co-Coordinator, ending the exhibition of polar bears may be an option for some zoos.

### **RECOMMENDATION #4**

*Stop the export of polar bears to zoological facilities in tropical regions.*

#### ***Physical/Behavioural Considerations***

Dr. William Jordan, Scientific Fellow of the London Zoological Society and wildlife veterinarian, states that “The polar bear is one of the most unsuitable species for confinement in zoos. It has special physiological requirements, especially a cold environment”.

Former Metropolitan Toronto Zoo keeper Marilyn Cole stresses, “Temperature is an extremely important consideration when housing animals adapted to polar climates. Ignoring the biological needs of the animal can have severe consequences.”

Polar bears are remarkably well adapted to cold environments, both from a physical perspective and a behavioural perspective. As mentioned previously, polar bears have an outer layer of thick heavy hair, thick underfur, and a layer of fat up to 4" thick that serves to insulate them against the cold. According to Ian Stirling in *Bears, Majestic Creatures of the Wild* (1993), “The combined insulation of fat and fur is so effective that, as long as the bear is not exposed to wind, its body temperature and metabolic rate remain at the normal level even if the temperature drops to -37 degrees C (-35 degrees F).”

Clear, hollow guard hairs comprise the outer layer of hair. These serve to reflect light down the shaft of the hair where it is absorbed by the polar bears black skin, another unique adaptation to the cold.

Zoo polar bears in warm climates often develop “green fur” due to algae growth in the hollows of the guard hairs. While this may not directly impact on the physical health of the bear, it is unnatural, unsightly, is an indication of inappropriate conditions, and gives the visiting public a distorted view of polar bears.

Fur covers the entire body except for the nose and footpads, and the ears and tail are small and rounded to reduce heat loss. The nose is long and helps warm cold air as the bear inhales. According to *The Great Bear Almanac*, polar bears have “... hair between pads for protection from the cold; paws unique for swimming, shoveling snow, and travelling on and through snow”.

Other physical adaptations such as an elongated body, slender neck and relatively small head in proportion to body size are adaptations to streamline the bear for swimming; papillae and vacuoles on the footpads reduce slippage on slick surfaces; and a highly developed sense of smell to aid in the detection of seals across miles of sea-ice and tundra habitat, clearly demonstrate how well-adapted polar bears are to cold environments.



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Walking and swimming across large expanses of arctic territory have also led to the development of behaviours specific to cold weather environments. One hunting behaviour involves the bear pushing a block or mound of snow ahead of itself for concealment during seal stalks. Another involves an underwater stalk below the sea ice.

Polar bears are very clearly adapted to life in arctic conditions. Nothing in their physical or behavioural makeup prepares them for life in consistently hot environments.

### ***Air Conditioned Dens, Refrigerated Pools & Ice Machines***

In recent years, a few warm climate zoos have attempted to provide relief for the polar bears in their care through the provision of air-conditioned off-exhibit areas, refrigerated pools, and ice machines. While these offer welcome relief to the bears in the short term, they do little to address the overall problem of a consistently inappropriate climate.

Despite the best intentions of zoo directors and staff in warm climate zoos, polar bears still experience extremes in climate, such as consistently high temperatures and humidity, that they would never experience in the wild.

Captive polar bears should ideally be spending the majority of their time in large, natural substrate exhibit areas. There is no feasible way to moderate the temperature in a large open exhibit area, especially in a hot climate.

According to bear biologist Mat Reid, “You’d have to house polar bears indoors in an air-conditioned or refrigerated area. But if that was done, you couldn’t give them the space they require.”

Veterinarian Samantha Lindley expresses concern about polar bears in warmer climates: “Temperature regulation places a huge stress on these animals, even if they ‘cope’. Whilst they are coping with temperature variations to which they are not adapted, they cannot cope with other stressors, such as boredom, captivity, and human proximity with no prospect of escape. Many polar bear enclosures become suntraps in the summer, and water facilities are often poor.”

Lindley continues, “Tropical facilities are totally unsuitable for polar bears. The chances of artificially maintained environments breaking down are too high and the need for greater restriction of the bears renders such a destination a potential disaster in welfare terms.”

Another consideration is the potential for sale, trade, loan, or donation of polar bears from one facility to another in the same region. If a facility housing polar bears in an enclosure equipped with air-conditioned dens and a cold water pool decides it no longer wants those bears because of advanced age, unsightly appearance or poor health, there is a great likelihood that the bears may be sent to substandard facilities in the same region looking to acquire “box office” animals.

### ***Lack of Legal Protection for Zoo Animals***



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Many countries around the world still have no laws aimed at preventing the neglect and abuse of animals. Fewer still, have laws regulating the keeping of captive wildlife. The standards of zoos in many countries would horrify even the most ardent North American zoo supporter.

One example is the Aso Bear Park in Japan, a recipient of a Canadian polar bear in 1991, which is described in the report *Japanese Bear Parks* (1991) published by the World Society for the Protection of Animals: "With a total of 421 bears, this park holds the largest collection of bears in the world.... The bears are kept in 21 different enclosures ranging from a sprawling cement grotto to small barred cages and high-walled cement pens. Others are kept in narrow, underground chambers which can be likened to dungeons.

In an amphitheater with seating for more than 100 people, trained bears dance, roller skate and perform a series of other tricks in 20 minute shows.

The worst enclosures at Aso are the underground chambers. From these dungeons the sound of bears roaring and throwing their bodies against metal doors could be heard throughout the park. Each chamber is less than one meter wide and two meters long. Bars separated a contiguous series of chambers. In September 1991, 73 bears were kept this way. Dr. Suzuki, the park's veterinarian, explained that this area was used to isolate injured animals. He also admitted that bears were being kept in dungeons because the park was so overcrowded."

The report goes on to describe an enclosure housing two polar bears, "They share a bare cement compound only eight meters square, including a pool. When the huge male was not sleeping or swimming, he was pacing the tiny cement platform. The female rubbed the right side of her neck on the bars of a cage at the back of the enclosure. She continued this stereotypic behaviour hour after hour."

Other Japanese bears suffer even worse conditions. According to a representative of the animal protection organization Animal Refuge Kanzai, "A polar bear is in a cage the size of his body (vertically). He cannot lie down, and there is no other place for him to urinate/defecate. His coat is brown with his own feces. The owner lives in a rural area and does not have running water to clean the animal, only well water for drinking. The cage has a tin roof and is kept in the sun (it gets very hot here in Japan)."

The representative goes on to say, "There is nothing the Japanese government can or will do for this animal. There are no laws against such treatment of an animal, nor are there any laws against having a threatened species as a pet".

Veterinarian John Gripper who has conducted zoo inspections around the world, including a number in Japan in 1996, says, "The conditions in some eastern European and Asian countries are even worse. In Shirotori Animal Land, Japan, I found a polar bear confined in a very small, dirty cage, on a concrete floor, with no enrichment, and no pool.... The owner was also an animal dealer and traded in wild animals for which there is no legislation or inspection of their



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facilities.”

Naturalist Barry Kent MacKay, who has visited zoos in countries around the world, including Japan, asks, “Why would anyone in their right mind send bears to Japan?”

Absence of *adequate* animal protection legislation must be considered when transferring animals to jurisdictions around the world. Retaining ownership of the transferred animal through a loan agreement, or only allowing animals to be exported to countries with current legislation comparable to Canadian or US animal protection statutes, would go a long way toward safeguarding their welfare.

### **RECOMMENDATION #5**

***Euthanasia should be employed as a reasonable, humane course of action when acceptable zoological facilities are not available.***

Euthanasia is a controversial issue, but one that cannot be dismissed. While it remains a difficult subject for many members of the public, it should still be viewed as a potentially legitimate, humane, albeit unfortunate, alternative to the placement of polar bears in substandard facilities

### **OPINION LETTER FROM BEAR BIOLOGIST DR. LYNN ROGERS**

This report closes with an opinion letter on the following page from Dr. Lynn Rogers, renowned bear biologist, who endorsed Zoocheck Canada's recommendations and findings following an independent review.

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