



toronto
ZOO



Vancouver Island Marmot

Zoos and Conservation

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Approximate percentage of Earth's plants and animals inhabiting rainforests:

50 %

Amount of natural rainforest lost every year:

145 000 km²

Estimated number of species being lost each year from tropical rainforest habitats:

27 000

Estimated human population by the year 2020:

7.6 billion

Zoos first appeared in the 19th century. Known as 'Menageries,' the original concept was to display as diverse a collection of unique and fascinating creatures as the owner could find and were often a symbol of wealth. Today, with natural resources diminishing at an alarming rate and plant and animal species disappearing, zoos now focus on the conservation and preservation of endangered species and educating the general public.

The majority of endangered species have been affected by habitat destruction or exploitation. When basic methods of preservation and protection in the wild prove ineffective, captive breeding becomes the last resort. The survival of Przewalski's horses, Pere David's deer, the Arabian oryx, and the North American wood bison are classic examples of successful conservation efforts undertaken by zoos worldwide. In the case of the wood bison, the Toronto Zoo was directly involved in the Canadian Government's project to re-introduce this endangered species back into the wild. Beginning in 1985, wood bison born at the Toronto Zoo were shipped in groups to northern Manitoba and released into protected sections of grassland ecosystems. The success of this project resulted in the reclassification of the wood bison from 'endangered' to 'threatened' in the Species at Risk public registry.

COOPERATION AMONGST ZOOS:

Some species that are already in captivity could disappear quickly in the wild without concerted, aggressive efforts from Zoos that are specifically designed for the long-term preservation of the species. More than 800 zoological and conservation institutions, representing over 80 countries worldwide, participate in the ISIS Zoological Information Management System, a computerized system for collecting census data on animals in captivity. This system provides the information needed for effective genetic management of captive populations of a wide variety of species. This database currently contains information on more than 2.6 million animals.

Zoos must constantly collaborate to fulfill their responsibilities to the species they exhibit. To this end, the Toronto Zoo participates in animal breeding loans with other zoos. These loan programs help reduce inbreeding and provide separate, non-productive individuals with suitable mates. In North America, loans are coordinated through the Species Survival Plan (SSP), a co-operative effort among those zoos concerned with the population management of a particular species. Overall management strategies are coordinated by the Captive Breeding Specialist Groups of the IUCN (International Union for the Conservation of Nature).

FUTURE POSSIBILITIES:

One of the most promising methods of preserving endangered wildlife may be in the realm of artificial breeding. The Toronto Zoo is currently researching artificial insemination and inter-species embryo transfer in an effort to improve captive breeding practices/techniques. While recognizing the importance of advanced technology and progress in scientific research, zoos must stress the need for improved captive management as the first prerequisite for serious long-term wild animal propagation. This includes on-going research into nutrition, physiology, behaviour, and genetics, which is part of the daily routine at the Toronto Zoo and is essential for the development of scientifically-based recommendations for the preservation and management of the species in the Zoo's collection.

RE-INTRODUCTION:

On rare occasions, endangered species that are successfully bred in zoos can be re-introduced back into the wild. The re-introduction process is often a long and complicated process involving several government agencies and organizations requires protected habitat, cooperation and education of the local community, and a hands-off approach with the to-be released species. As a result, only a few species have been successfully re-introduced back into the wild, including Arabian oryx, black-footed ferrets, and golden lion tamarins. The re-establishment of a once-extinct wild population, however, is the ultimate goal of conservation in zoos.



In addition to being involved in the re-introduction of wood bison, black-footed ferrets, and Vancouver Island marmots, the Toronto Zoo has released thousands of endangered Puerto Rican crested toad tadpoles back into their wild habitat. Zoos are becoming more skillful in breeding endangered animals, but their contribution to society may have a more lasting effect through exciting the interests of humans to conserve and protect natural habitats.

WHY SHOULD YOU CARE?

Many people care about wildlife simply because we share the Earth with them. Caring about endangered species should be of importance to everyone because by protecting them, we preserve the world's biodiversity: the natural wealth of all life.

Wildlife forms the fabric of nature on which we rely on for medicine, food, and many other beneficial elements that controls the quality of our environment. While we still do not fully understand all of the associated benefits that wildlife has to offer, we do know that with each plant or animal species that goes extinct, we lose yet another opportunity to explore new options for food and medicine.

Biological Diversity is:

1. The variety within a particular species.
2. The variety among all wildlife species.
3. The variety of ecosystems which these species form.

RESOURCES

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Wildlife Species Assessments and Status Reports:

http://www.cosewic.gc.ca/eng/sct5/index_e.cfm

Species at Risk Public Registry:

http://www.sararegistry.gc.ca/default_e.cfm

Environment Canada – Conservation in Canada:

<http://www.ec.gc.ca/hsp-pih/default.asp?lang=En&n=59BF488F-1>

The Nature Conservancy – Rainforest Status:

<http://www.nature.org/ourinitiatives/urgentissues/rainforests/rainforests-facts.xml>

Current Human Population Estimates and Growth Rates

<http://www.worldometers.info/world-population/>

Toronto Zoo – Species Survival Plan

The following table provides information about some of the Species Survival Plans that the Toronto Zoo is currently involved in. The table includes information on their status, as well as their location within the Toronto Zoo.

DESCRIPTION OF CODES

<u>Code</u>	<u>Description</u>						
1, 2, or 3	<p>CITES APPENDICES I, II, or III. As assigned by the CONVENTION ON THE INTERNATIONAL TRADE OF ENDANGERED SPECIES.</p>						
EW, CR, EN, VU, NT, LC	<p>IUCN RED LIST Categories</p> <table border="0"> <tr> <td>EW = Extinct in Wild</td> <td>CR = Critically Endangered</td> </tr> <tr> <td>EN= Endangered</td> <td>VU = Vulnerable</td> </tr> <tr> <td>NT = Near Threatened</td> <td>LC = Least Concern</td> </tr> </table>	EW = Extinct in Wild	CR = Critically Endangered	EN= Endangered	VU = Vulnerable	NT = Near Threatened	LC = Least Concern
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EN= Endangered	VU = Vulnerable						
NT = Near Threatened	LC = Least Concern						
EP, EN, TH, SC	<p>COSEWIC – Committee on the Status of Endangered Wildlife in Canada designations</p> <table border="0"> <tr> <td>EP = Extirpated</td> <td>EN = Endangered</td> </tr> <tr> <td>TH = Threatened</td> <td>SC = Special Concern</td> </tr> </table>	EP = Extirpated	EN = Endangered	TH = Threatened	SC = Special Concern		
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TH = Threatened	SC = Special Concern						
Ue, Ut, Um	<p>U.S. ENDANGERED, THREATENED, OR MARINE MAMMAL</p> <table border="0"> <tr> <td>Ue = Endangered</td> <td>Ut = Threatened</td> </tr> <tr> <td>Um =Marine Mammal</td> <td></td> </tr> </table>	Ue = Endangered	Ut = Threatened	Um =Marine Mammal			
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SSP	SPECIES SURVIVAL PLAN						

Species <i>(Common name, scientific name)</i>	Status	Program	CITES appendix listing	Zoo Location
VERTEBRATES				
<u>Class: Mammals</u>				
African cheetah <i>Acinonyx jubatus jubatus</i>	VU	SSP	1	African Savanna
African lion <i>Panthero leo</i>	VU	SSP	2	African Savanna
Matschie's tree kangaroo <i>Dendrolagus matschiei</i>	EN	SSP	Not Listed	Australasia Pavilion
Black-footed ferret <i>Mustella nigripes</i>	EP X	SSP	1	Americas Pavilion & off-exhibit
Black-handed spider monkey <i>Ateles geoffroyi geoffroyi</i>	CR	SSP	2	Americas- Mayan Temple
Clouded leopard <i>Panthera nebulosa</i>	VU	SSP	1	Malayan Woods Pavilion
Gaur <i>Bos frontalis</i>	VU	SSP	1	Indo-Malaya Pavilion
Golden lion tamarin <i>Leontopithecus rosalia</i>	EN	SSP	1	Americas Pavilion
Great Indian rhinoceros <i>Rhinoceros unicornis</i>	VU	SSP	1	Indo-Malaya Outdoor Exhibits
Grevy's zebra <i>Equus grevyi</i>	EN	SSP	1	African Savanna
Jaguar <i>Panthera onca</i>	LC	SSP	1	Americas- Mayan Temple
Lion-tailed macaque <i>Macaca silenus</i>	EN	SSP	1	Indo-Malaya Outdoor Exhibits
Malayan tapir <i>Tapirus indicus</i>	VU	SSP	1	Indo-Malaya Outdoor Exhibits

Species (Common name, scientific name)	Status	Program	CITES appendix listing	Location
Polar Bear <i>Ursus maritimus</i>	SC	SSP	2	Tundra Trek
Przewalski's horse <i>Equus przewalski</i>	EW	SSP	1	Eurasia Wilds
Pygmy Hippopotamus <i>Choeropsis liberiensis</i>	EN	SSP	2	African Rainforest Pavilion
Red panda <i>Ailurus fulgens refulgens</i>	VU	SSP	1	Eurasia
Snow leopard <i>Uncia uncia</i>	EN	SSP	1	Eurasia Wilds
Spotted-necked otter <i>Lutra maculicollis</i>	VU	SSP	2	African Rainforest Pavilion
Sumatran orangutan <i>Pongo pygmaeus abelii</i>	CR	SSP	1	Indo-Malaya Pavilion
Sumatran tiger <i>Panthera tigris sumatrae</i>	CR	SSP	1	Indo-Malaya Pavilion
Western lowland gorilla <i>Gorilla gorilla gorilla</i>	EN	SSP	1	African Rainforest Pavilion
White-handed gibbon <i>Hylobates lar</i>	LC	SSP	1	Indo-Malaya Pavilion
White rhinoceros <i>Ceratotherium simum simum</i>	NT	SSP	2	African Savanna
<u>Class: Birds</u>				
Black-footed penguin <i>Spheniscus demersus</i>	VU	SSP	2	African Savanna

Species <i>(Common name, scientific name)</i>	Status	Program	CITES appendix listing	Location
<u>Class: Reptiles</u>				
Burmese star tortoise <i>Geochelone platynota</i>	CR	SSP	2	Indo-Malaya Pavilion
Eastern massasauga rattlesnake <i>Sistrurus catenatus</i> <i>catenatus</i>	TH	SSP	Not Listed	Americas Pavilion
Komodo dragon <i>Varanus komodoensis</i>	VU	SSP	1	Australasia Pavilion
<u>Class: Amphibians</u>				
Puerto Rico crested toad <i>Peltophryne lemur</i>	CR	SSP	Not Listed	Conservation Efforts: off-exhibit

The status of Toronto Zoo's Animal Collection as of February 28, 2014:

	Mammals	Birds	Reptiles	Amphibians	Fish	Invertebrates	Total
Orders	9	20	4	2	18	29	82
Families	36	47	24	11	51	51	220
Species	83	100	65	26	120	101	495
Specimens	597	355	288	210	164	132	1746
# in Group	0	0	8	593	4556	657	5816
Total	597	355	298	803	4720	789	7562