



# Endangered Species Tour

## Self Guided Grades 5-6

### John Ball Zoo

1. **Waterfowl:** This exhibit displays a wide variety of wildlife, but not nearly as varied as a natural wetland, which is represented here. A natural wetland is almost as diverse and rich in life as a rain forest. Many different insects, birds, fish, and other animals depend on wetlands for their existence. Humans have traditionally used wetlands (swamps, marshes, bogs, fens, etc.) as dumps for unwanted trash. We have viewed them as ugly, icky places where bugs and creepy crawlies live. Wetland areas were bulldozed and filled in for parking lots, malls, and other developments. What we did not realize is that we were not only destroying valuable wildlife habitat, but buffers that keep the adjacent waterways clean and pollutant free. Wetland areas act as giant sponges to soak up runoff from urban areas, farm and crop lands. Without these sponges many chemicals, pesticides and other hazardous wastes are picked up by wildlife. If we continue to drain, pollute, and otherwise destroy wetland areas, this crucial and extremely important habitat will be destroyed, taking with it all kinds of wildlife.



2. **Bald Eagle:** These majestic birds were once in grave danger of being lost forever due to habitat destruction and chemical pollutants like DDT, lead, mercury, etc. Because we have made progress in cleaning up the environment, these birds are now no longer considered endangered, but are 'merely' threatened. This is good news in that eagles are making a comeback. Their populations in the lower 48 states are increasing. This does not mean they are out of danger, however. Here at JBZ this pair has successfully raised chicks for several years. The offspring have been part of the release program in Tennessee. Michigan's Bald Eagle population has been on the increase, whereas those in Tennessee have been less fortunate.

3. **Living Shores:** As you walk into this building, it is our hope that you will feel as though you are in the actual habitats of the various animals on display. The Michigan Stream, the Pacific Northwest Coast, and the Patagonian shore are all equi-distant from the equator. Although they are very diverse, they share common elements. Cool waters, abundant oxygen, and rapid currents make these areas rich with wildlife. Each of the organisms in these habitats requires all these factors to survive. If some outside factor disrupts the environmental quality in these areas, wildlife cannot survive. For example, if the water is warmed by some factor, such as discharge from nuclear power plants, trout will no longer be able to survive; oil spills in the southern Atlantic Ocean have the potential to wipe out whole colonies of penguins; hydroelectric dams can prevent salmon from reaching their upriver spawning grounds.



4. **Adventure World/Children's Zoo:** The Barn Owl here is listed by the Michigan Department of Natural Resources as being endangered in the state. Due to changes in the farming industry, nesting and prey supplies for these birds have decreased. New plowing methods displace many rodent species. The decreasing number of barns makes it harder for Barn Owls to find nest sites.

5. **Golden Eagle:** This bird species, although not necessarily in trouble itself, is protected because it is so similar in appearance to Bald Eagles. This way the killing of a Bald Eagle cannot be justified just because the person thought it was a Golden Eagle.

6. **Otter:** Overall, the North American River Otter is not considered endangered. This is due, to a large extent, to conservation measures enacted in the 60's & 70's that (1) stopped over trapping of otters & beavers, and (2) reduced pesticide use. However, currently, loss of habitat is having an impact on the Nevada population and speculation is that this is also impacting the Florida population. In fact, anywhere we are losing wetlands, developing river, stream, or lake banks, and still introducing pollutants into the ecosystem, the otter populations will be impacted.

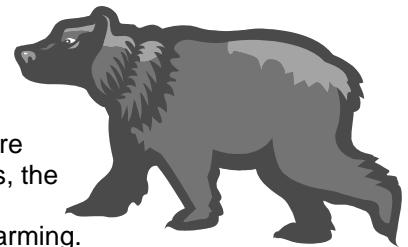
During the 80's & early 90's, the anti-fur forces had an impact on fur trapping in this country. This resulted in a rise of particularly beaver populations, which in turn created greater otter habitat. Recently, there has been an increase in fur demand – particularly from Asia. No one knows how this will affect otters, which are a desired fur species.

There are several states that currently list the otter as endangered: Arizona, Colorado, Illinois, Indiana, Nebraska, and Ohio. The otter is extirpated\* in New Mexico and Prince Edward Island (Canada). It is threatened in S. Dakota and Iowa. Michigan allows from zero to two otters to be hunted for pelts, depending on the county.

In short, the biggest threat to otters is loss of habitat, pollution, and potential increase in interest in their fur.

- Dall Sheep:** It is estimated there are more than 1500 Dall Sheep in 5 separate populations in North America. The populations are stable and probably not in immediate danger. Three minor threats could decrease Dall Sheep numbers. One is habitat loss, another is pressure from hunting, the third (and probably more likely) threat is disease. Domestic sheep are resistant to diseases that wild sheep are not. When wild and domestic sheep ranges overlap, the possibility exists for diseases to be transmitted to the Dall Sheep. This could affect their numbers.

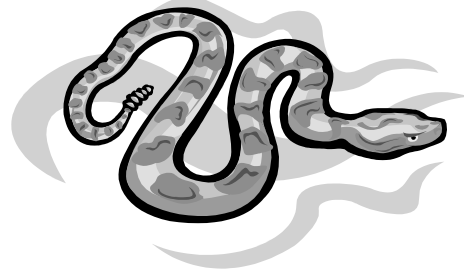
- Bear:** Grizzly bears are threatened because they have been killed out of fear and/or sport. Asian bear numbers are decreasing rapidly because their body parts have been used as folk medicines, decorations, clothing, and food. Due to dwindling bear populations in Asia, hunting & poaching pressures on North American bear species are increasing to support the Asian bear-part market. Another bear species, the Polar Bear, has begun to decline due to extensive polar ice-melt and other problems which most scientists believe to be a result of global warming.



- Puma & Snow Leopard:** Habitat destruction plays an important role in the population decrease of these two great predators. In the US, Pumas were hunted to near extinction in the short-sighted belief this would eliminate the chance of attack on humans or livestock. Attacks on people have increased since the late 1980's, however many of these are believed to be the result of increasing numbers of people entering puma habitat, often without taking care to take steps known to significantly decrease the chance of a dangerous encounter. In Asia, Snow Leopard fur was taken for coats. As a result, Snow Leopards are highly endangered. We at JBZ have successfully raised many Snow Leopard cubs in recent years to aid in the survival of these vanishing species.

- South American Exhibit:** Maned Wolves are endangered because of habitat loss. They are also hunted for folk medicine. Because of the perceived notion that they pose a threat to livestock, they have been shot on sight. (This view has historically been often adopted by ranchers towards wolves in North America.) John Ball Zoo, along with other zoos in North America and Europe, have been working towards the preservation of this unusual species. In the wild they are elusive and reclusive creatures, so not much is known about them and their habitats. Only through cooperative efforts with other zoos and wildlife researchers can this animal be saved from an untimely extinction.
- Chimpanzees:** Wild chimpanzees face many threats. There used to be more than 1 million chimps living in the wild, but now, there are only about 150,000. Human expansion into their habitats for logging, building new roadways, and agriculture (farming) purposes, has caused their populations to become reduced or fragmented. Taking them from the wild has also caused a decline in their populations. Many chimps are hunted by people for food (bushmeat), or to protect their crops, or even for capture for the animal trade. Because they are so smart, chimps have been involved in many scientific studies, and unfortunately some people try to keep them as pets, or train them for "entertainment" work. These conditions have resulted in the chimpanzee being an endangered animal species.

12. **Treasures of the Tropics building:** *Goeldi's Monkeys* – these rainforest primates are experiencing difficulties in the wild because they are very rare and their habitat is diminishing so rapidly these Marmosets cannot adjust to the changes. *Aruba Island Rattlesnakes* – this snake is restricted to a mere 40 acre site on Aruba Island in the Caribbean Sea. Loss of habitat due to resort development and collecting for the pet trade has greatly reduced their numbers; this species has been listed as critically endangered. *Wood Turtle, Spotted Turtle, Eastern Box Turtle*, – The spotted turtle is listed as Threatened by the state of Michigan, while the wood and box turtles (as well as the Blanding's turtle—often found in the Waterfowl exhibit) are listed as "Species of Special Concern". While not afforded legal protection, these species are of concern because of possibly declining numbers. Their populations are being studied and, should it be found they have decreased significantly, these turtles would then be afforded protection. Other Michigan reptiles & amphibians that are listed by the state include: 1) Endangered—Kirtland's snake, Northern copperbellied watersnake, and the Small-mouthed salamander, 2) Threatened—Eastern fox snake, marbled salamander, 3) Special Concern—Black rat snake, Eastern Massasauga Rattlesnake, Blanchard's cricket frog, and Boreal chorus frog.



13. **Monkey Island:** Critically endangered, these monkeys come from the rainforest of South America, where the habitat is severely threatened. Rainforests are being destroyed at an alarming rate, often for agricultural space or commercial logging. Rainforests once covered 14% of the earth's land surface, but now cover only about 6%. A typical 4 square mile patch of rain forest is thought to contain up to 1500 species of flowering plants, 750 species of trees, 400 species of birds, 150 species of butterflies, 125 species of mammals, 100 species of reptiles, and 60 species of amphibians.

14. **Frogs:** The majority of frogs in the world live in tropical rainforests. Nearly every second, and acre of the rainforest is being cut down and destroyed. Currently, new species of frogs are being found quite frequently, but with deforestation and habitat loss the population of frog species is quickly on the decline. Frogs use the trees as shelter from many predators and even find their food in trees. The decrease in the amount of shelter for frogs will result in the decrease of the number of frogs in the wild. Currently, John Ball Zoo does not have any endangered frogs on exhibit but is working to develop better breeding techniques with other species, such as the poison dart frogs, in order to prepare breeding programs for endangered frogs in the future.

# ENDANGERED SPECIES

*Laws that Protect*

**Endangered Species Act:** Provides the means for the conservation of endangered and threatened species and the ecosystems upon which they depend. Currently over 1100 animal species, and almost 750 plant species are listed, with another 280+ animal and plant species considered as candidates for listing.

Before a plant or animal species can receive protection under the Endangered Species Act, it must first be placed on the Federal list of endangered and threatened wildlife and plants. The listing program follows a strict legal process to determine whether to list a species, depending on the degree of threat it faces. An “endangered” species is one that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered in the foreseeable future.

John Ball Zoo’s Protected Species:

Bald Eagle	Goeldi’s Marmoset	Maned Wolf
Grizzly/Brown Bear	Siberian (Amur) Tiger	Snow Leopard
Aruba Island Rattlesnake	Chimpanzee	Cotton-top Tamarin
South American Tapir	Puma	Jamaican Boa
Komodo Dragon	<i>Massasauga (proposed Candidate 2006)</i>	

Visit the web at <http://www.fws.gov/endangered/kids/index.html> for more information on the US Endangered Species program

**CITES (Convention on International Trade in Endangered Species of wild fauna and flora):** An international agreement between governments that establishes procedures to regulate import and export of wild species threatened by trade. Approximately 170 countries take part in CITES. Roughly 5,000 species of animals and 28,000 species of plants are protected by CITES against over-exploitation through international trade. There are three levels (appendices) of protection.

- I. Protects species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- II. Protects species not necessarily threatened with extinction, but in which trade must be regulated & controlled.
- III. Species not covered by the above can be regulated by a nation for conservation purposes. This Appendix contains species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.

John Ball Zoo’s CITES protected species:

<b>I</b>			<b>III</b>
Cotton-top Tamarin	Puma/Mountain Lion	Grey Parrot	Hoffman’s Sloth
Siberian (Amur) Tiger	South American Tapir	Common Barn Owl	(Costa Rica)
Snow Leopard	Guanaco	Burrowing Owl	Mexican Porcupine
Black-footed Cat	Chilean Flamingo	Great Horned Owl	(Honduras)
Goeldi’s Marmoset	Black-necked Swan	Screech Owl	Kinkajou (Honduras)
Chimpanzee	Turkey Vulture	Red-crested Cardinal	Bongo (Ghana)
Lilac-crown Amazon parrot	Bald Eagle	Wood Turtle	Common Shoveler
Military Macaw	Golden Eagle	Eastern Box Turtle	(Ghana)
Barn Owl	Harris Hawk	SA Red-footed Tortoise	Eyelash Viper
Komodo Dragon	Af. White-backed Vulture	Chaco Tortoise	(Honduras)
Jamaican Boa	African Pygmy Falcon	Sulcata Tortoise	Aruba Is. Rattlesnake
Black-headed spider	Crested Caracara	Dwarf Caiman	(Honduras)
Monkeys	W. African Crowned Crane	Veiled Chameleon	
	Triton Cockatoo	Iguanas	
<b>II</b>	Blue & Yellow Macaw	Gila Monster	
(all Primates except in I )	Green-winged Macaw	Boas & Pythons	
Maned Wolf	Patagonian Conure	Poison Frogs	
Brown/Grizzly Bears	Hawk-headed Parrot	Emperor Scorpion	
NA River Otter	Monk Parakeet		

**Migratory Bird Treaty Act:**

Protects migratory birds, their nests and eggs because what affects them in their winter range also affects their summer range.

John Ball Zoo's protected birds:

Geese, ducks, Golden & Bald Eagle, Caracara, Barn Owl, Great horned owl, Harris Hawk, Magpies, Cardinals, Etc.

**Wild Bird Conservation Act: (1992)**

Prohibits importation of wild caught birds, except with permits for breeding, display and research, ensures that wild populations will not be harmed by trade.

**Lacey Act:**

Oldest wildlife law – enforces laws, regulations, and treaties, covers import, export, transport, possession, sale or purchase of species taken in violation of state, foreign or tribe law.

**Important Words related to the study of Endangered Animals:**

**Extirpated** - when a species no longer exists in the wild in a certain place, but exists elsewhere.

**Extinct** - when a species no longer exists, there is no reasonable doubt that the last individual has died.

**Extinct In The Wild** - when a species is known only to survive in cultivation, captivity or as a naturalized population well outside the past range.

**Critically Endangered** - when a species is facing an extremely high risk of extinction in the wild in the immediate future.

**Endangered** - when a species is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future.

**Threatened** - when a species whose population is not yet low enough to be in immediate danger of extinction, but who certainly faces serious problems. If the problems affecting these species aren't resolved, it is probable that the species will become endangered.

**Internet Resources for the Study of Endangered Species**

<http://web4.msue.msu.edu/mnfi/data/specialanimals.cfm>

<http://www.fws.gov/endangered/kids/index.html>

<http://www.cites.org/>

<http://www.iucnredlist.org/>

<http://www.worldwildlife.org/endangered/>

<http://www.aza.org/ConScience/>

# ZOO TOUR ACTIVITY

## Endangered Species

As you tour the Zoo, look for these protected species.  
Can you find reasons why they are in trouble?



Bald Eagle: Threatened Species

Problem: \_\_\_\_\_

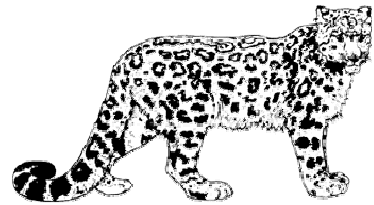
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Grizzly Bear: Threatened Species

Problem: \_\_\_\_\_

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Snow Leopard: Endangered Species

Problem: \_\_\_\_\_

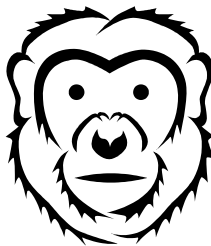
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Maned Wolf: Endangered Species

Problem: \_\_\_\_\_

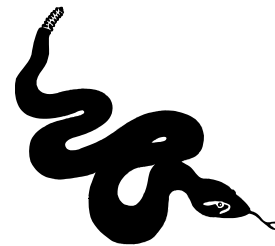
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Goeldi's Monkey: Endangered Species

Problem: \_\_\_\_\_

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Aruba Island Rattlesnake: Threatened Species

Problem: \_\_\_\_\_

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Black-headed Spider Monkey:  
Critically Endangered Species

Problem: \_\_\_\_\_

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